

FIG. 1 PRIOR ART

FIG. 2A 3255007

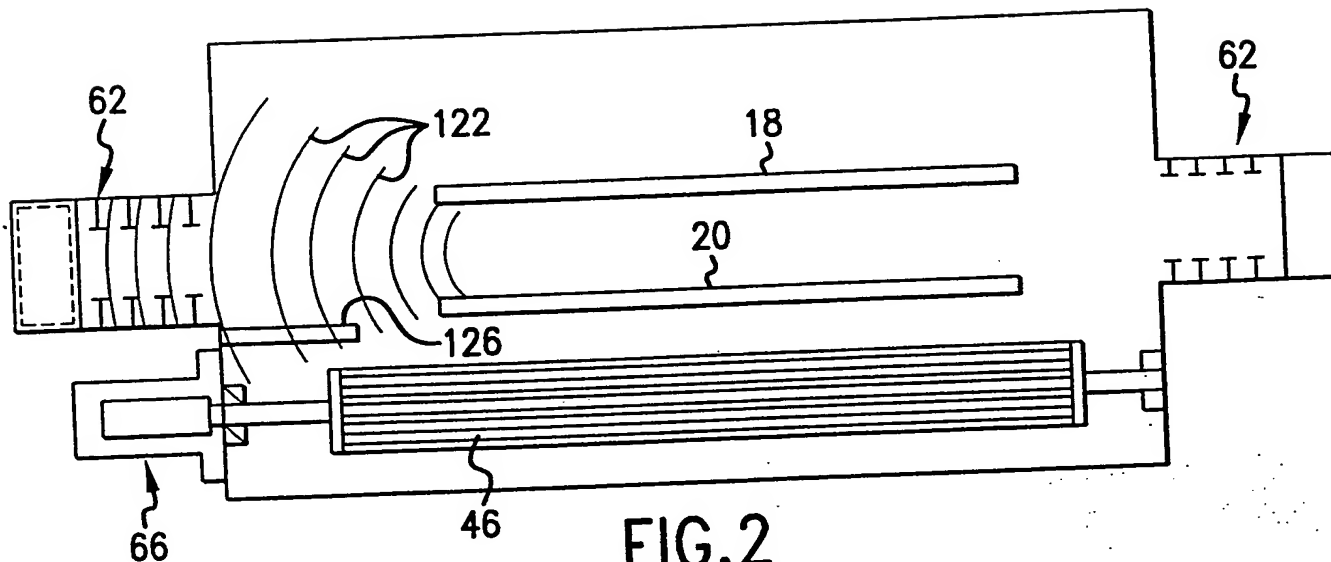


FIG. 2  
(PRIOR ART)

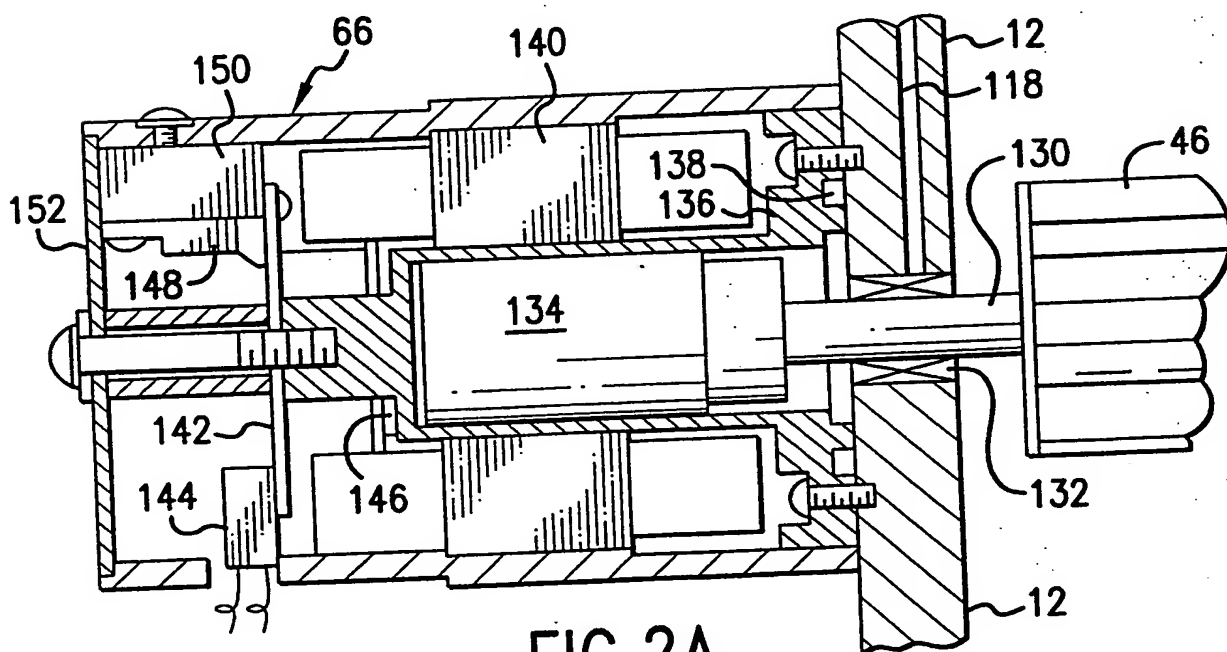


FIG. 2A  
(PRIOR ART)

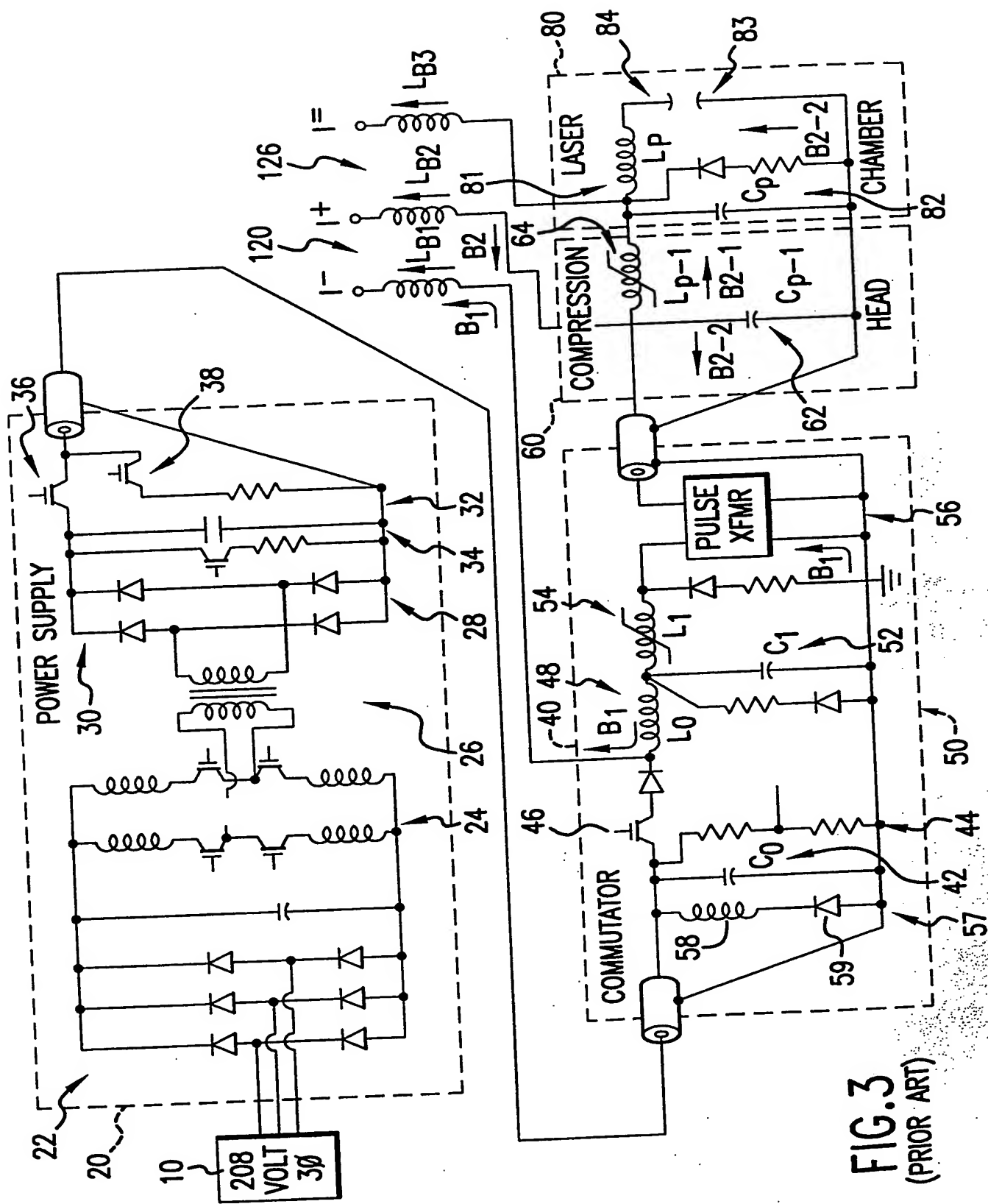


FIG. 3  
(PRIOR ART)

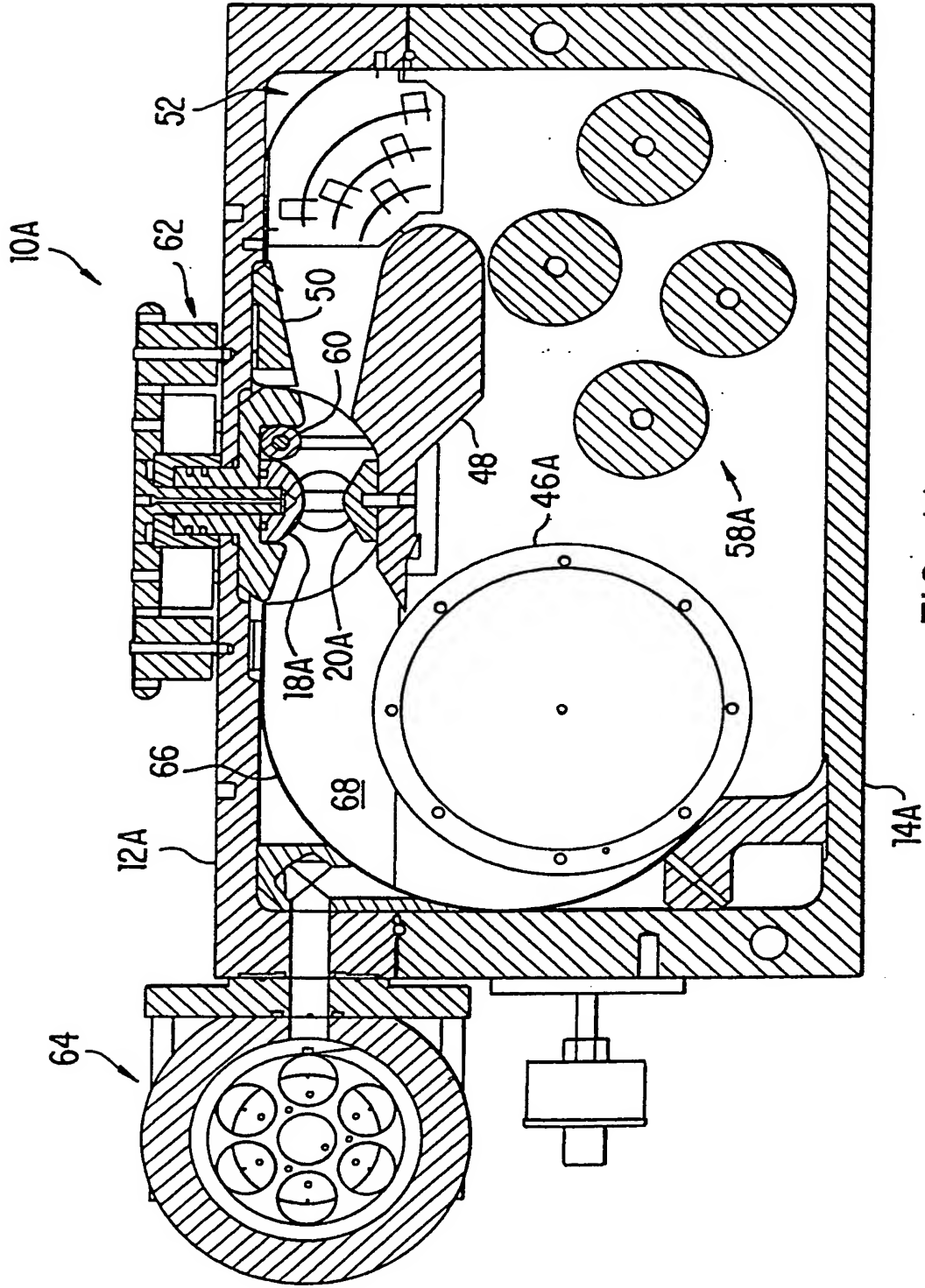


FIG. 4A

FIG. 4B

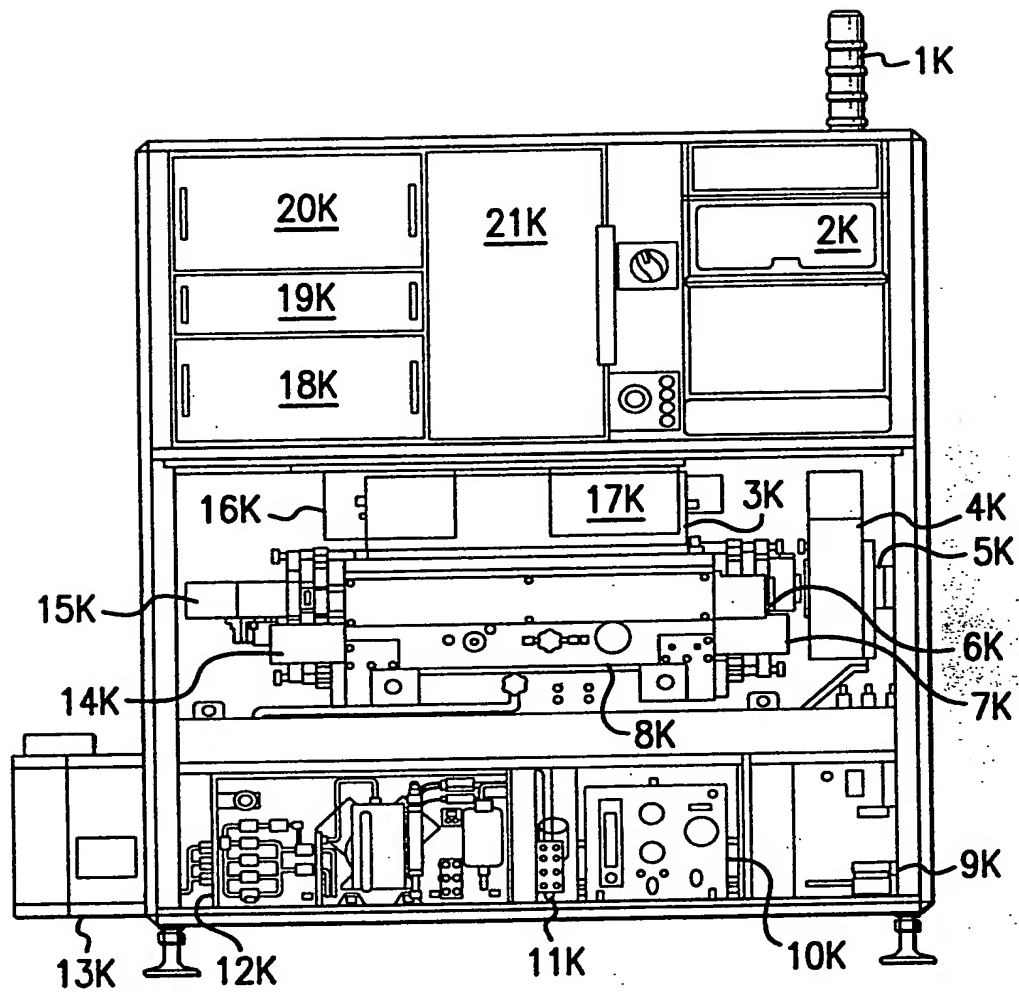


FIG.4B

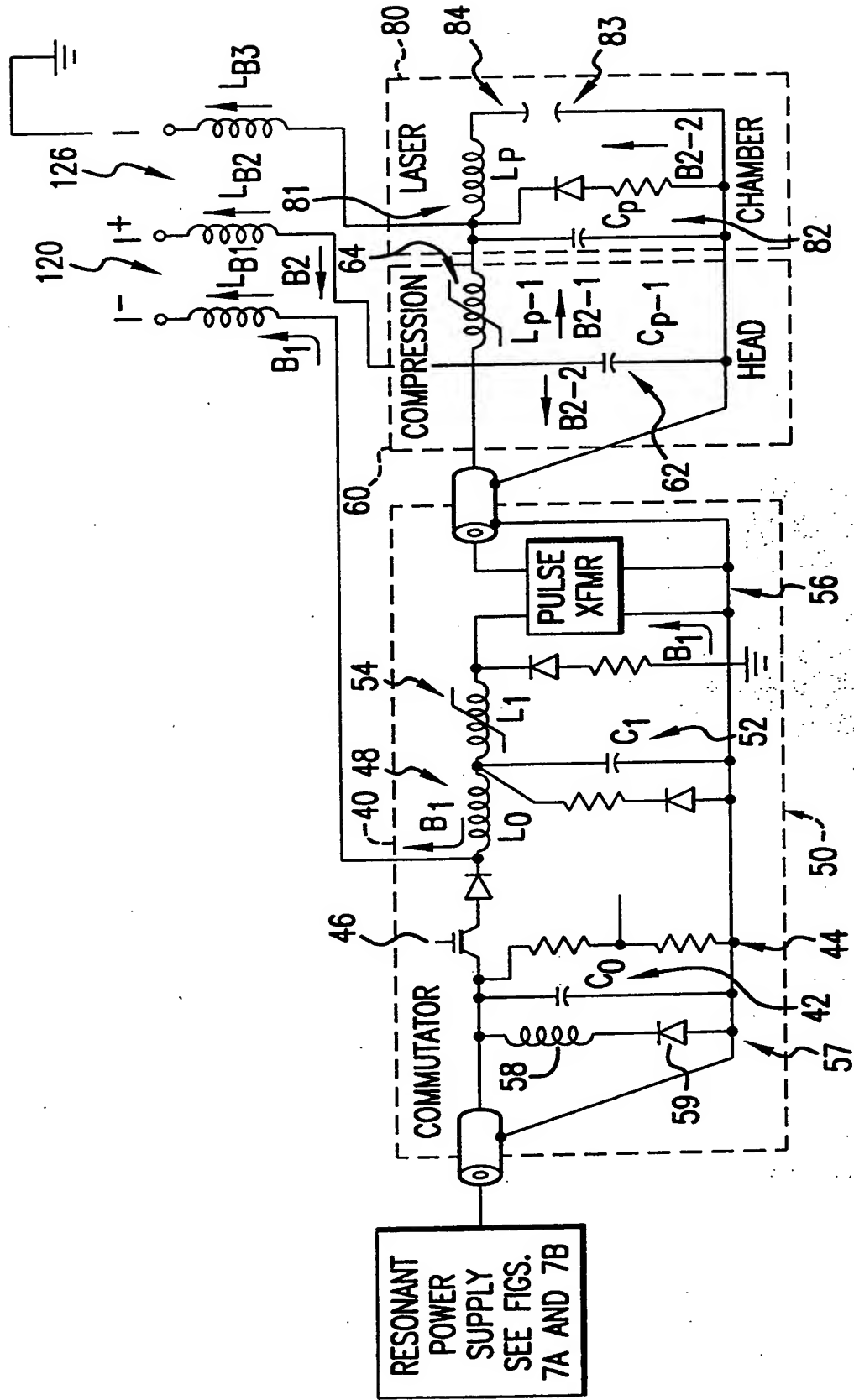


FIG.5

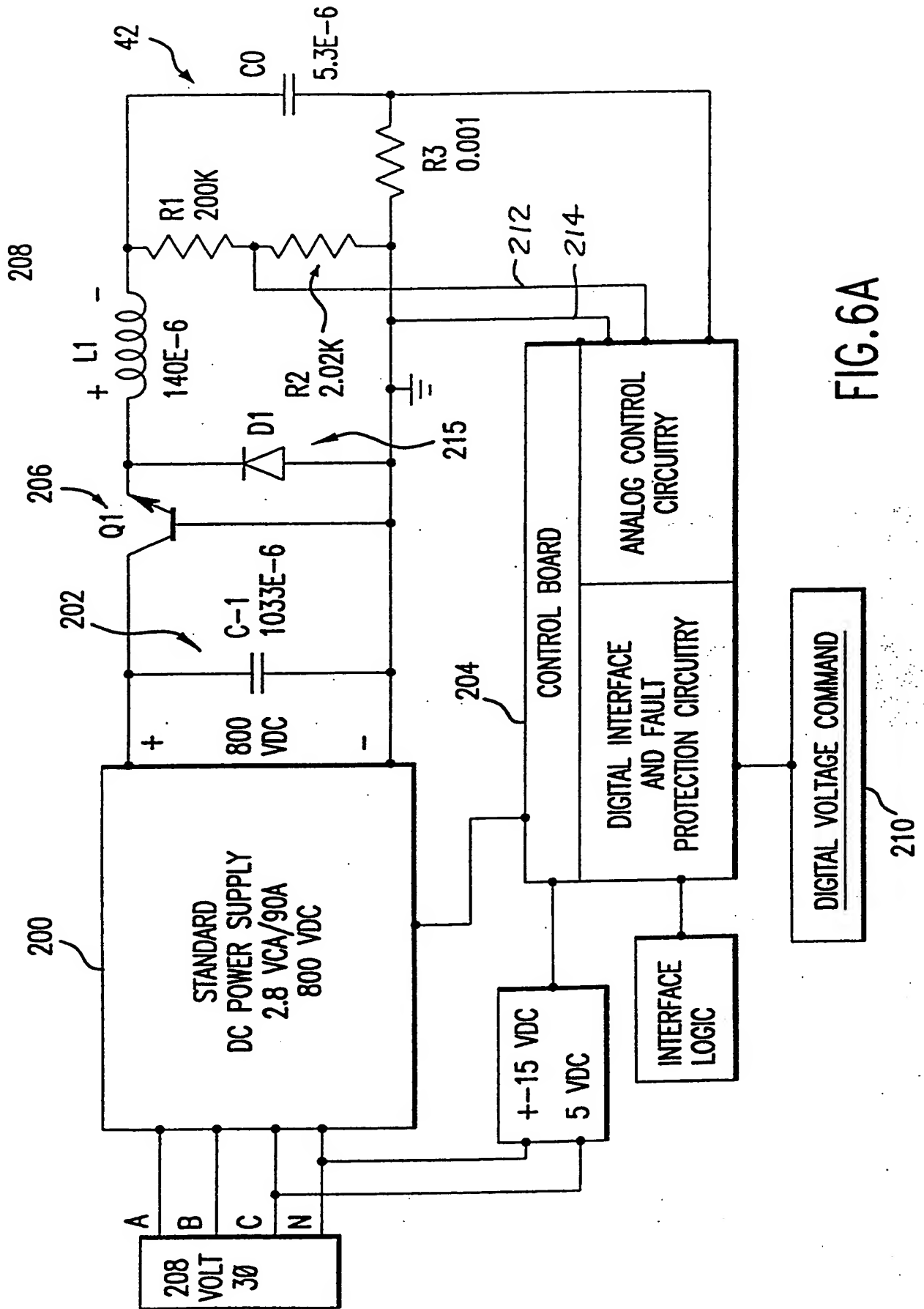


FIG. 6A

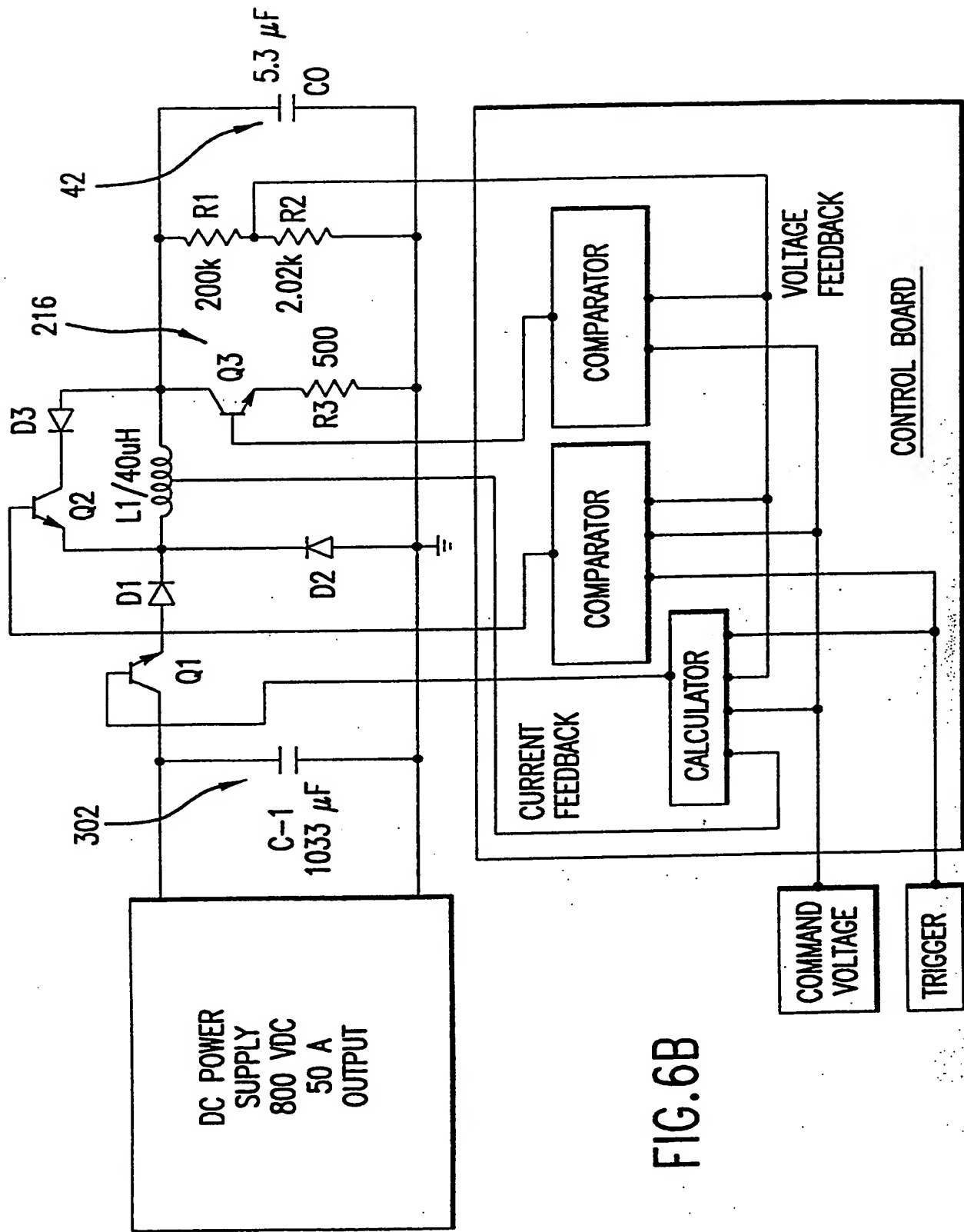
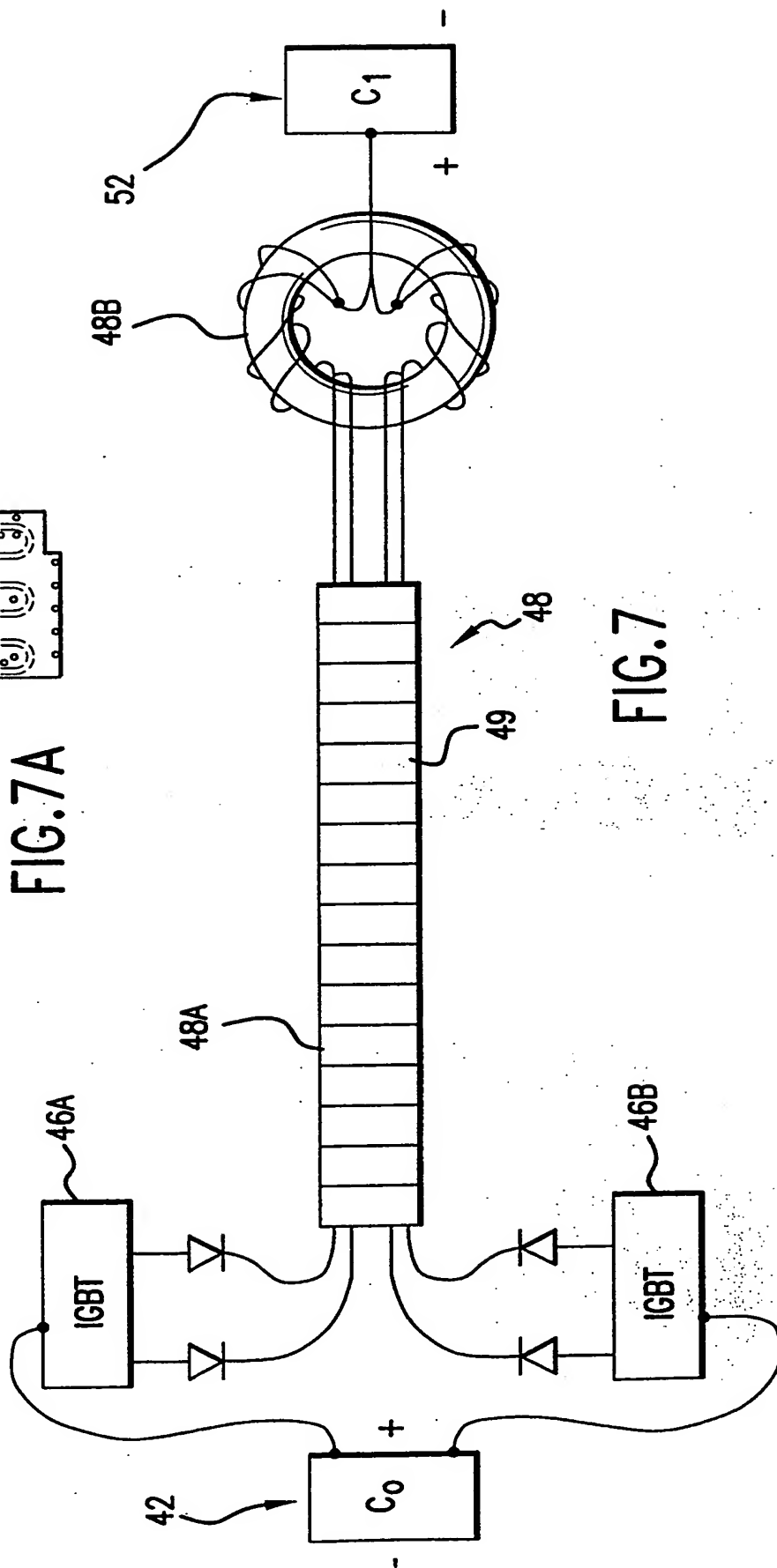
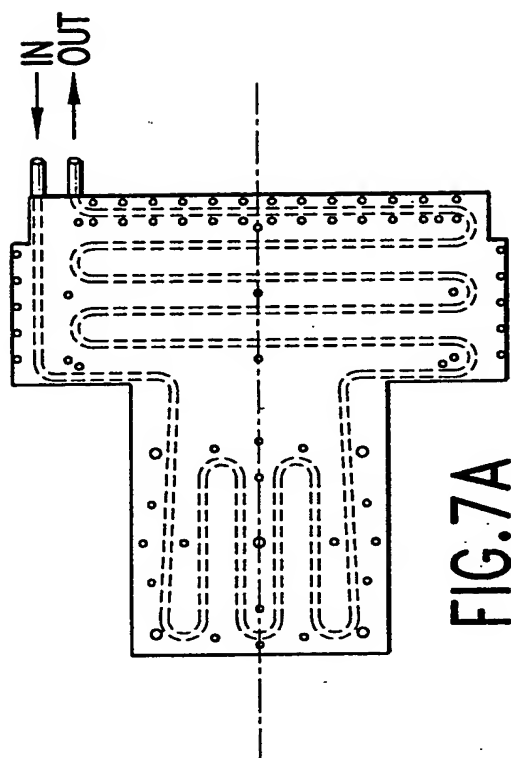


FIG. 6B





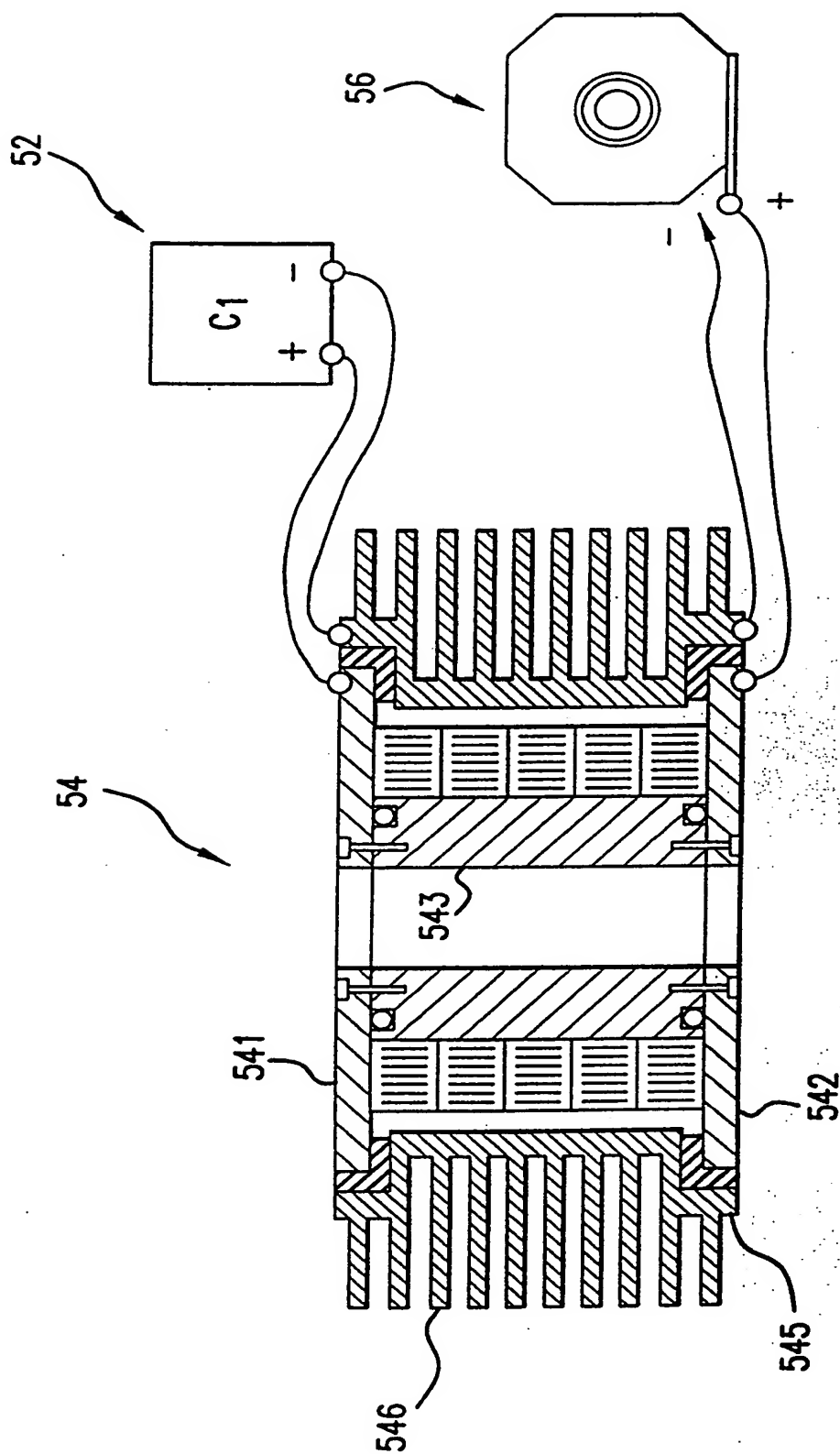
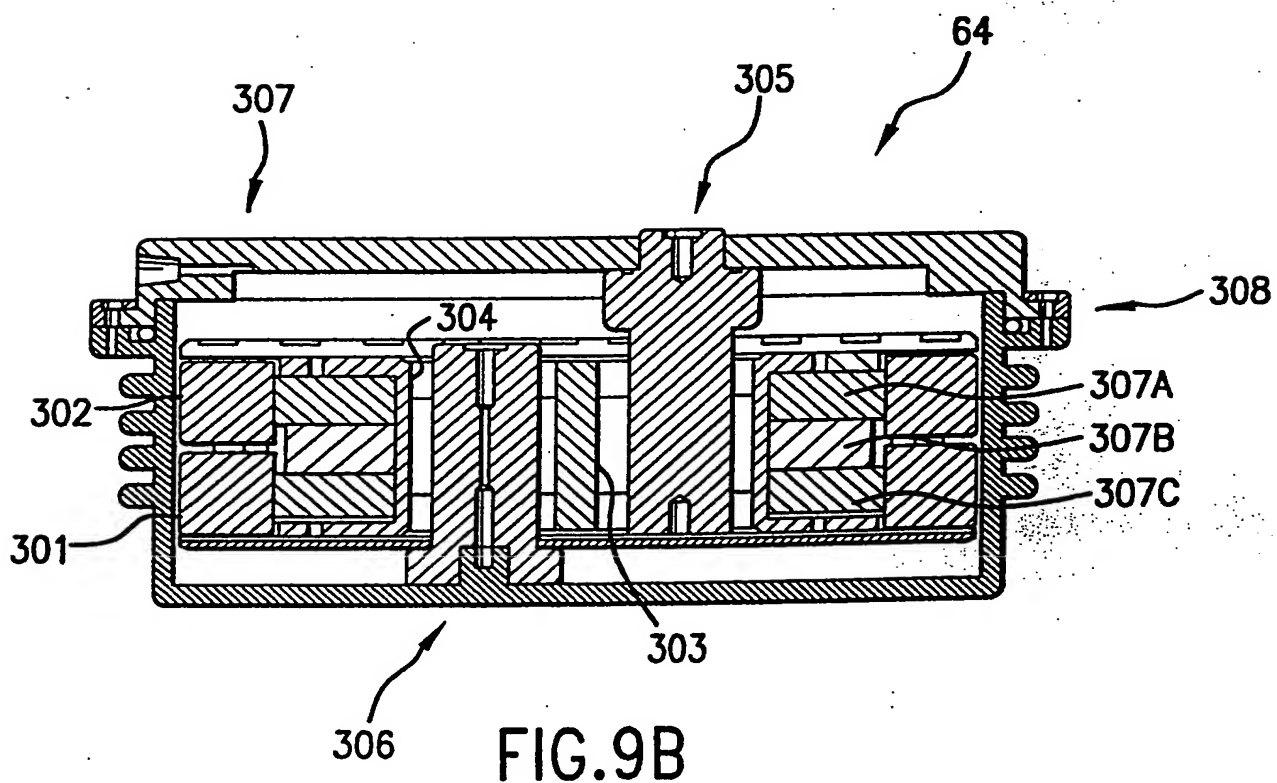
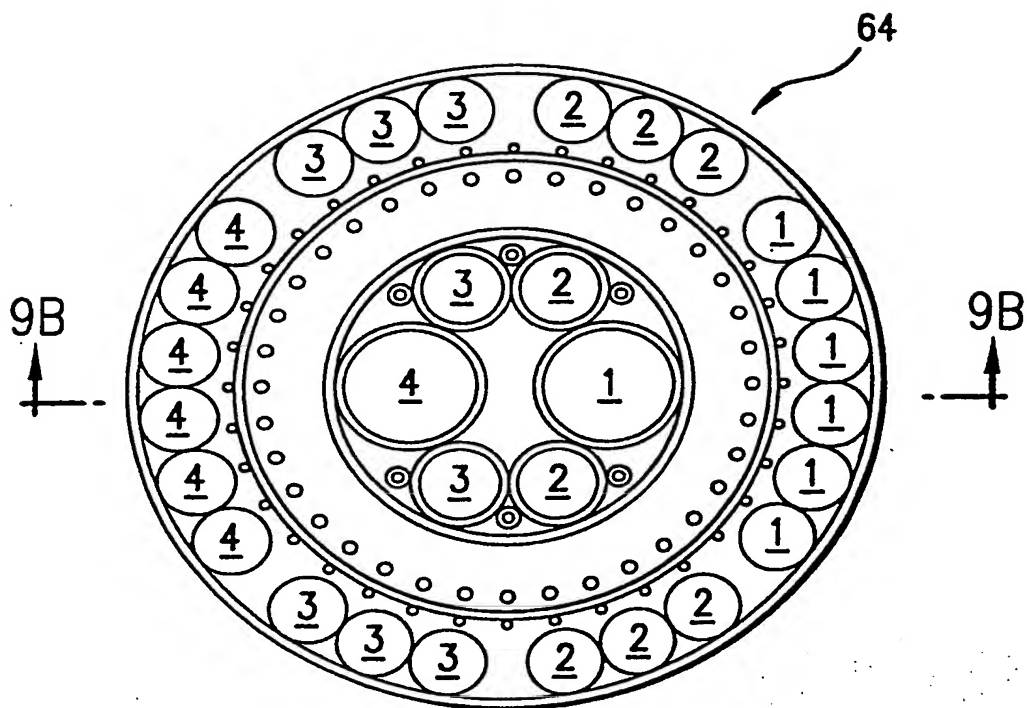


FIG. 8



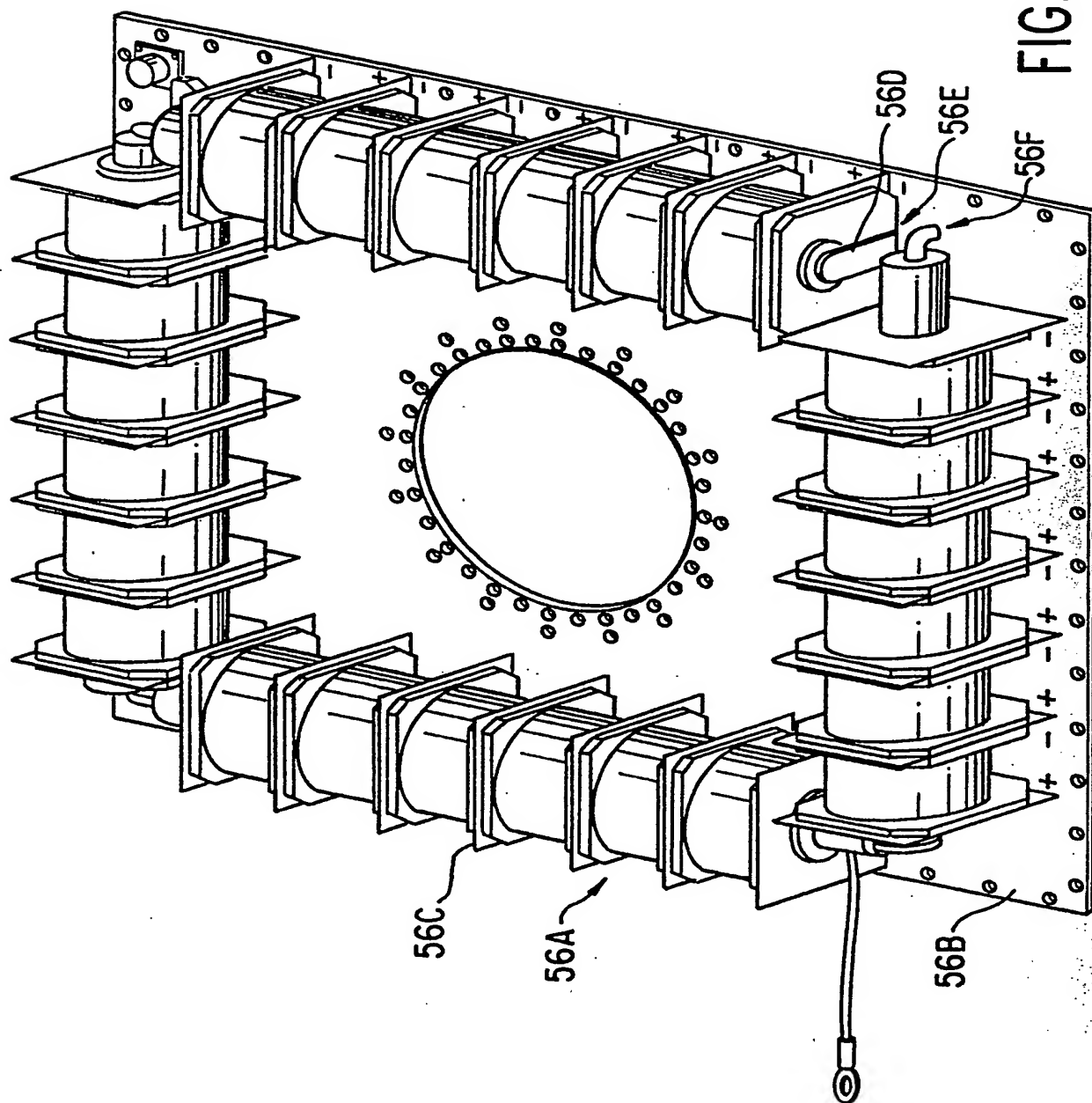


FIG. 10

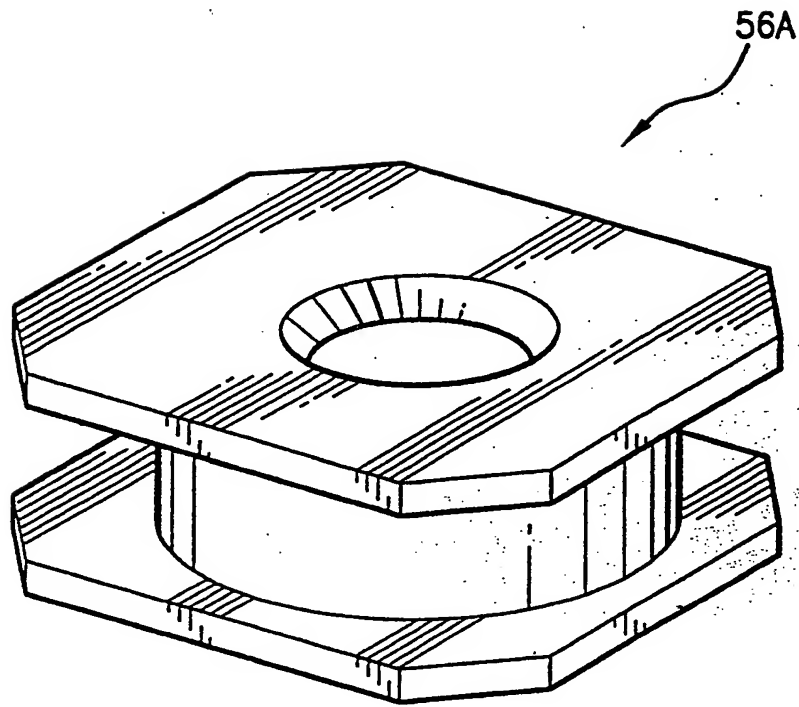


FIG. 10A

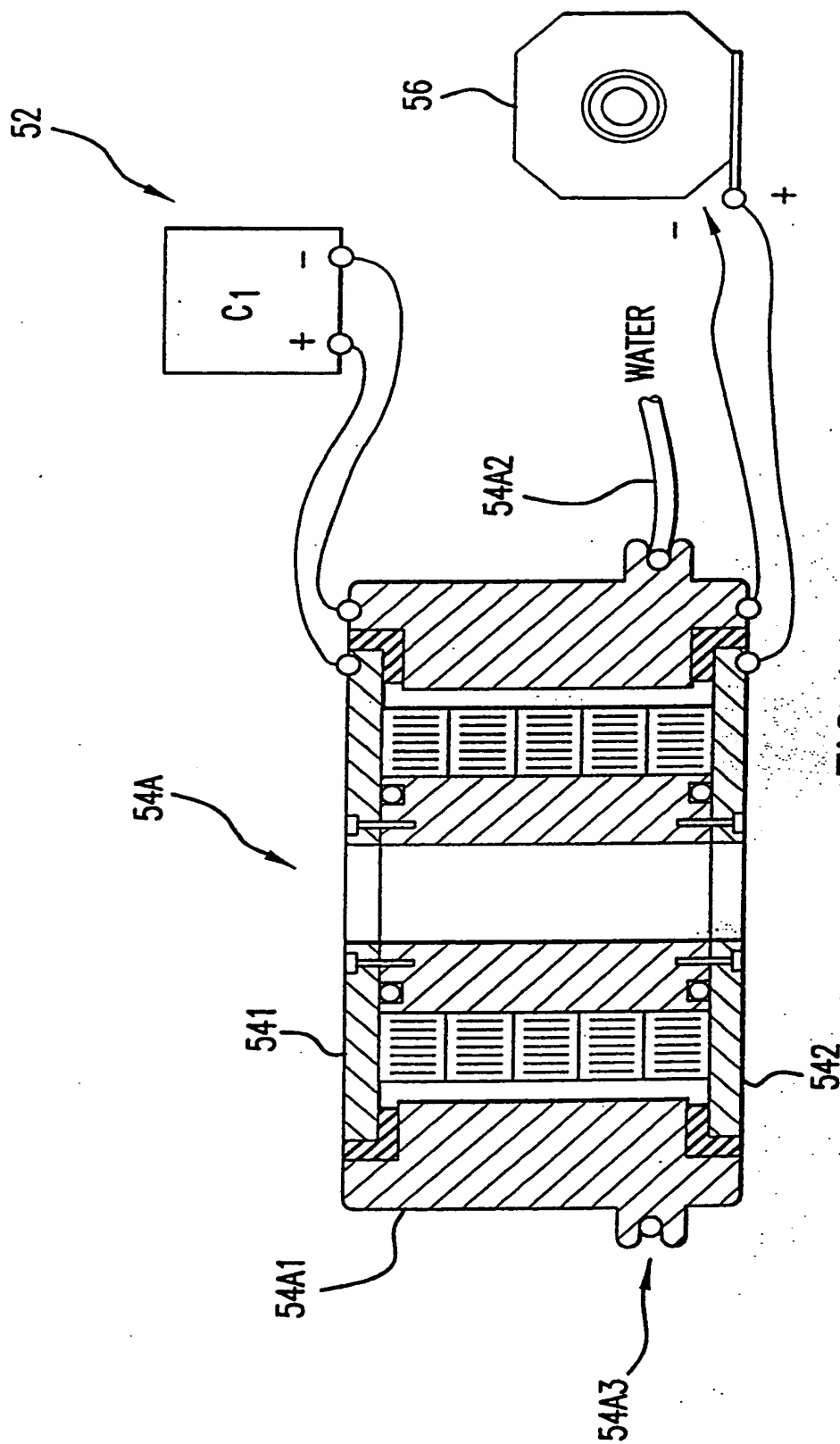
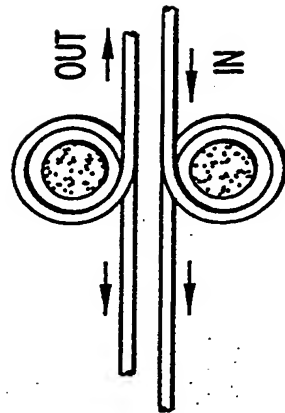
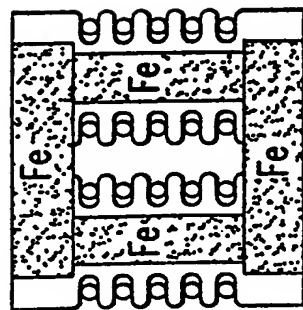
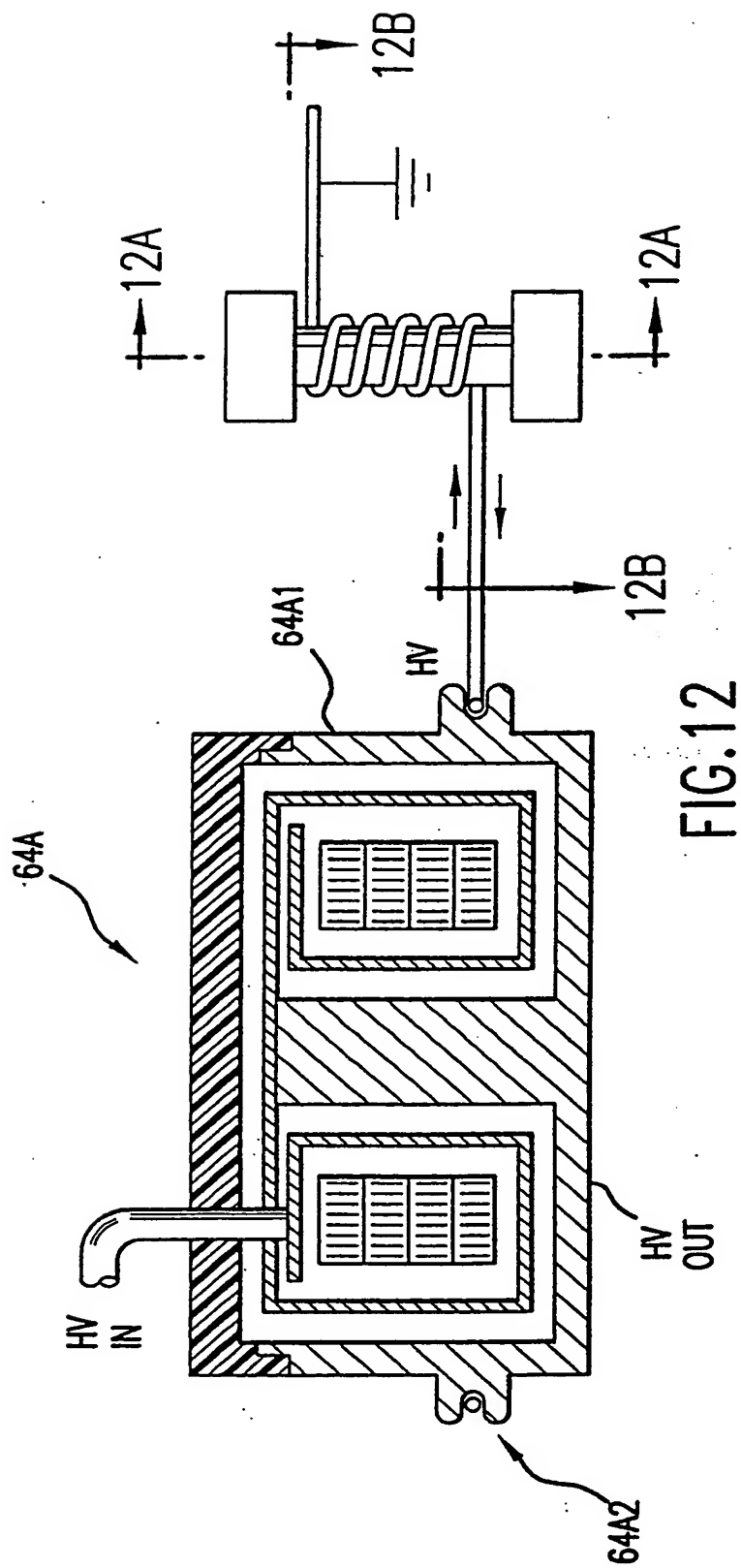


FIG. 11



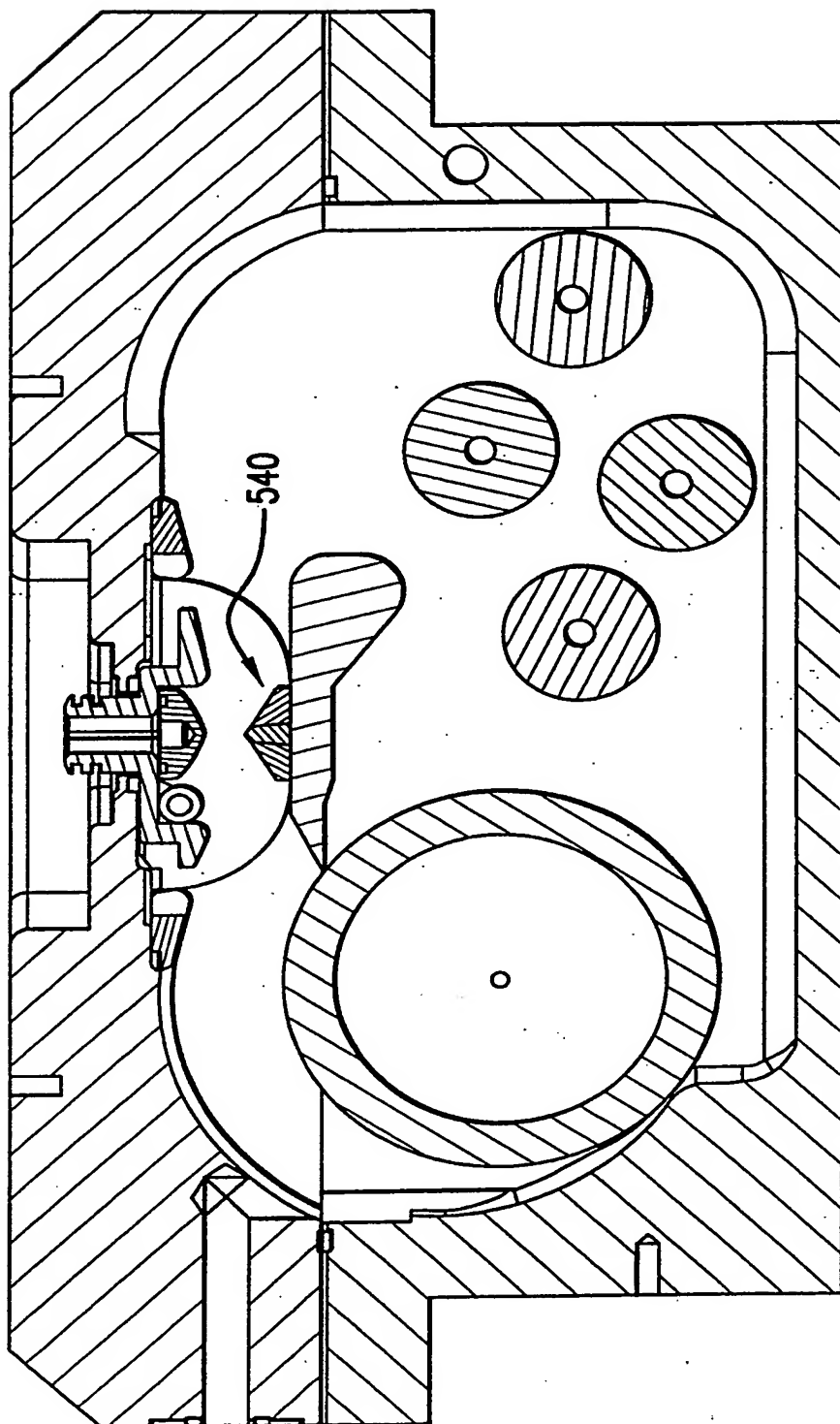


FIG. 13



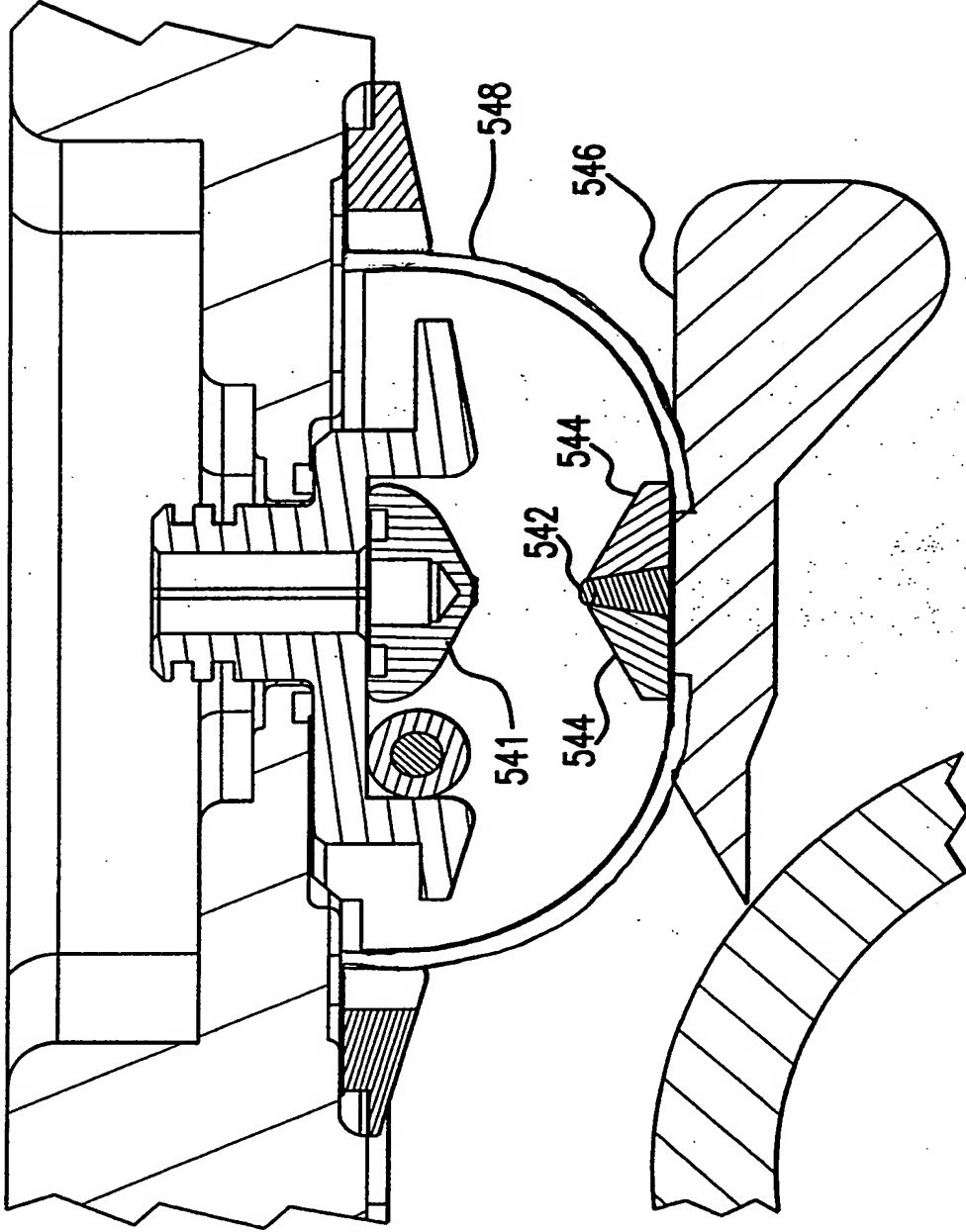


FIG. 13A(1)

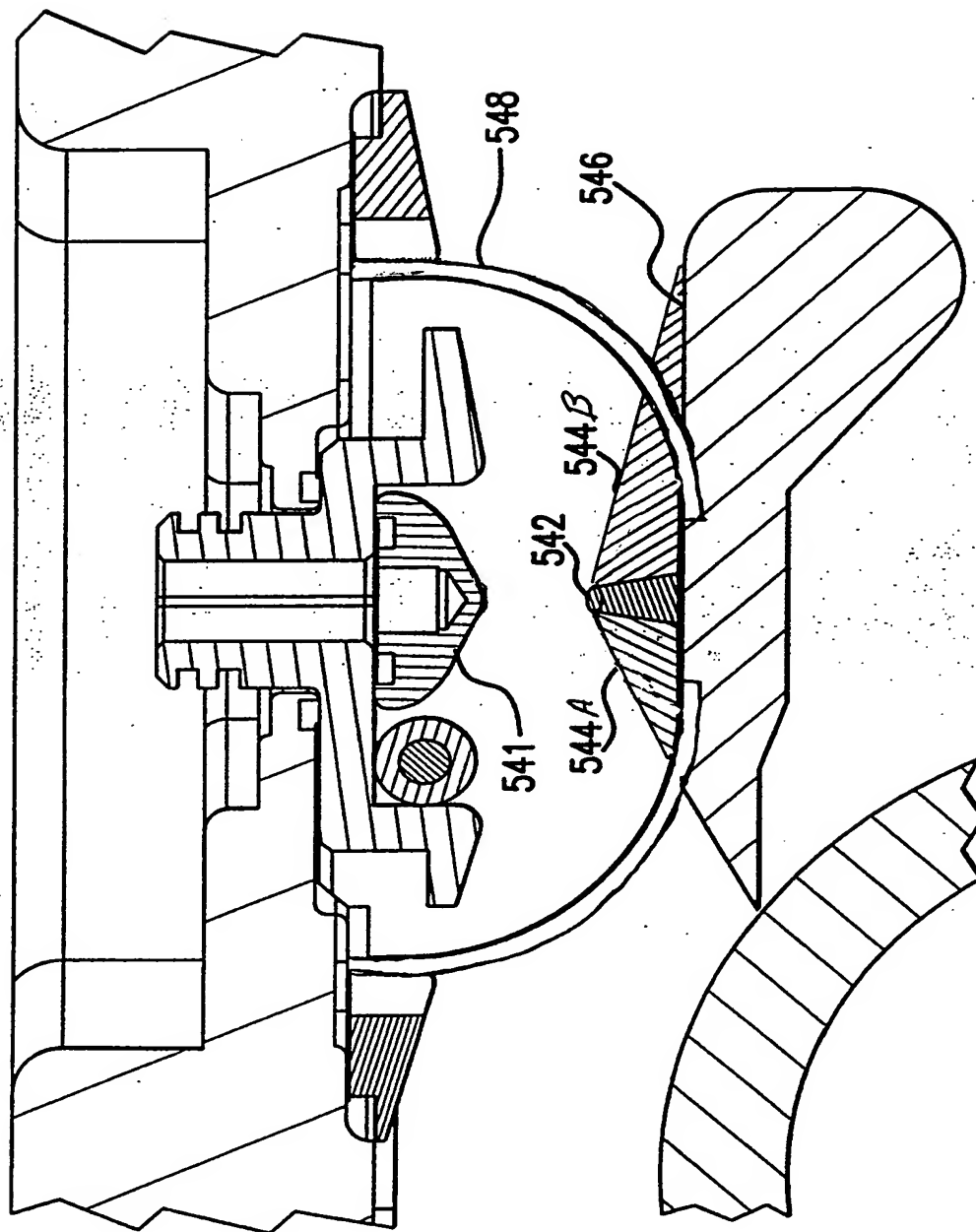
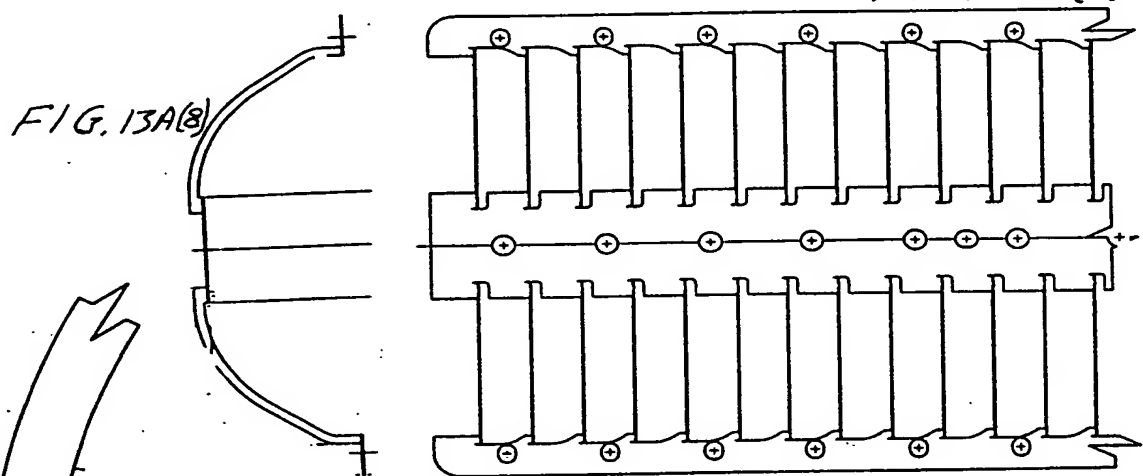
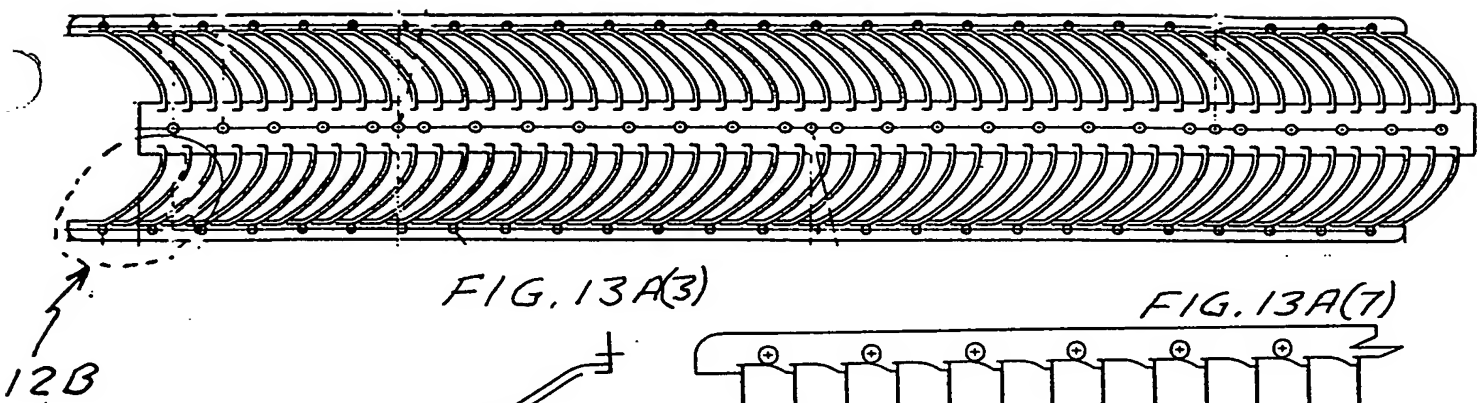


FIG. 13A(2)



4093676 422404

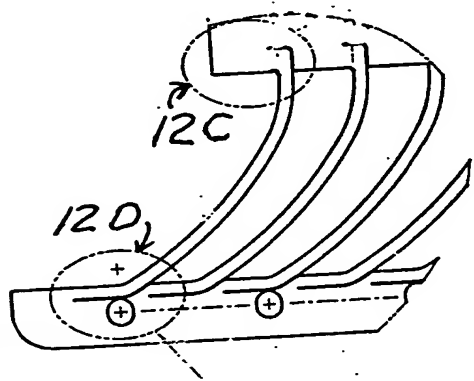
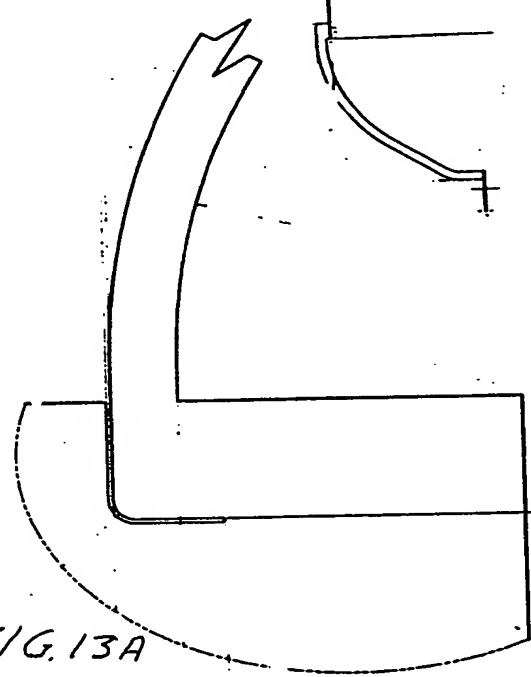
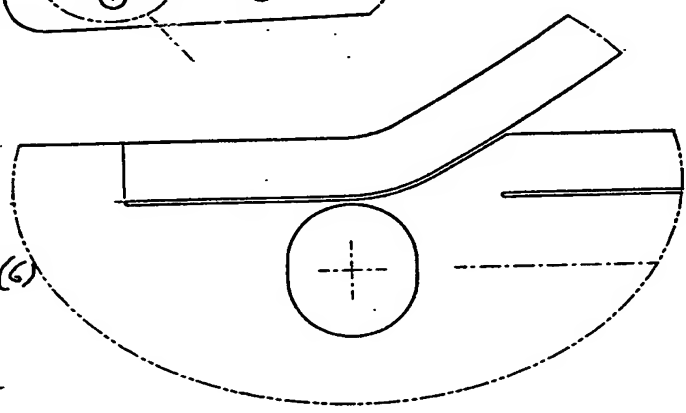


FIG. 13A4

FIG. 13A(5)

FIG. 13A(6)



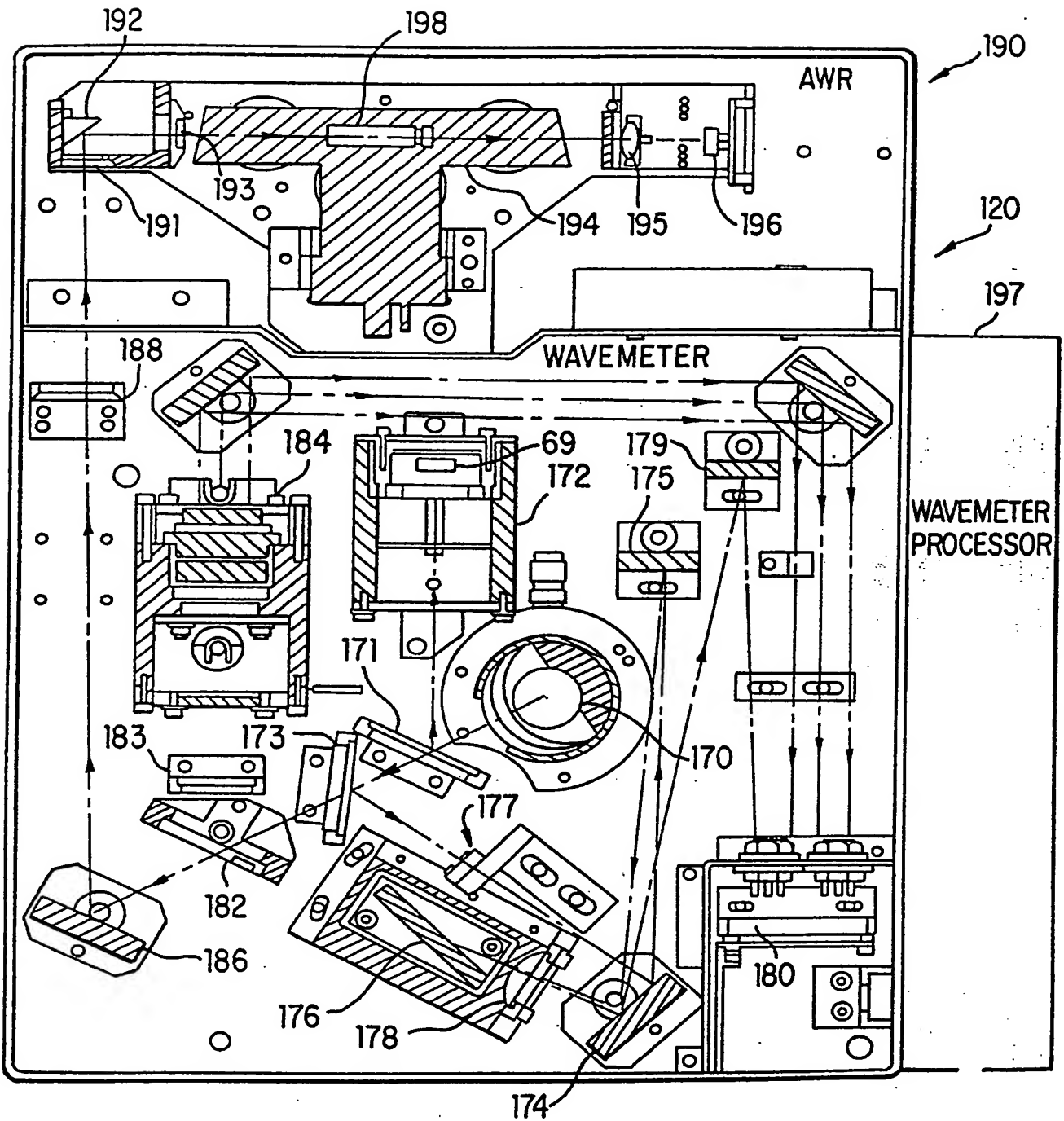


FIG.14

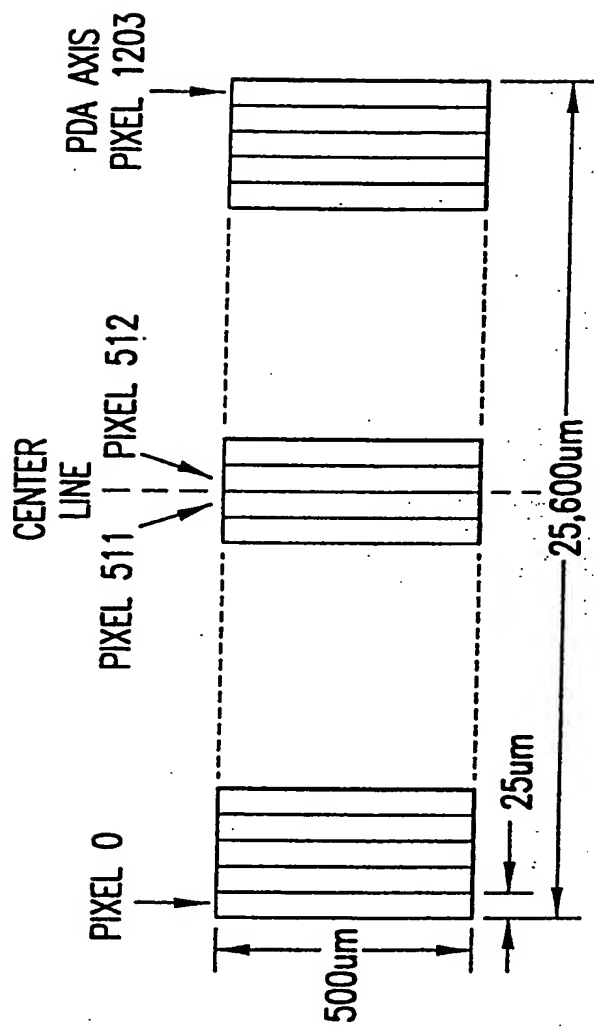


FIG. 14A

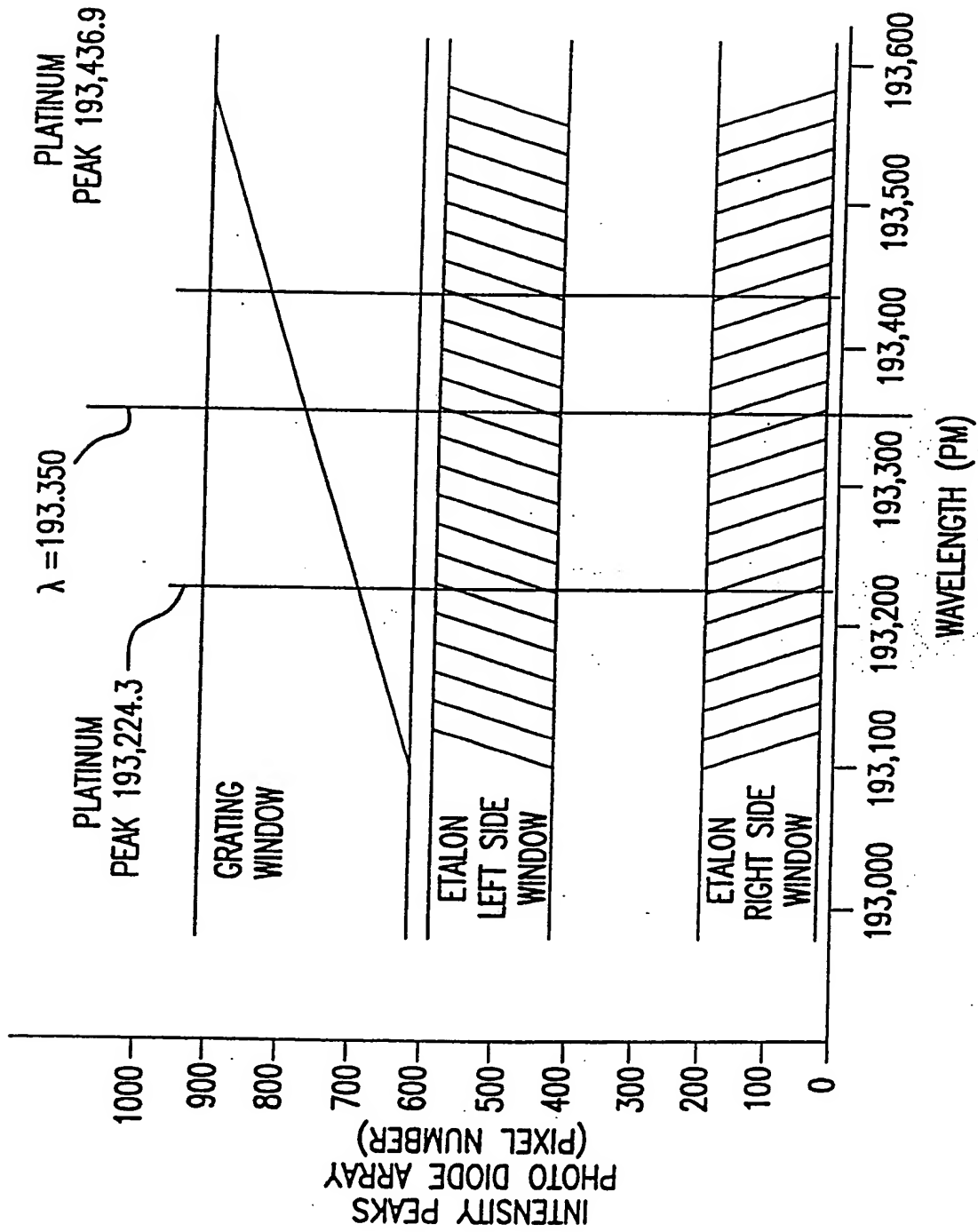


FIG.14B

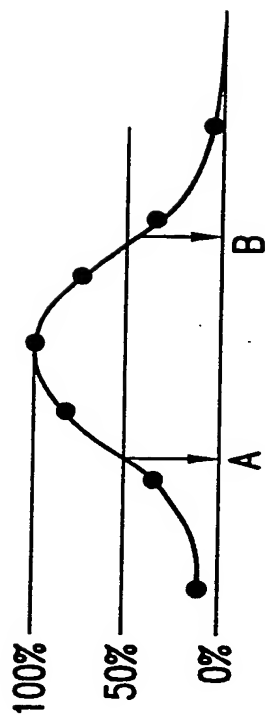


FIG. 14C

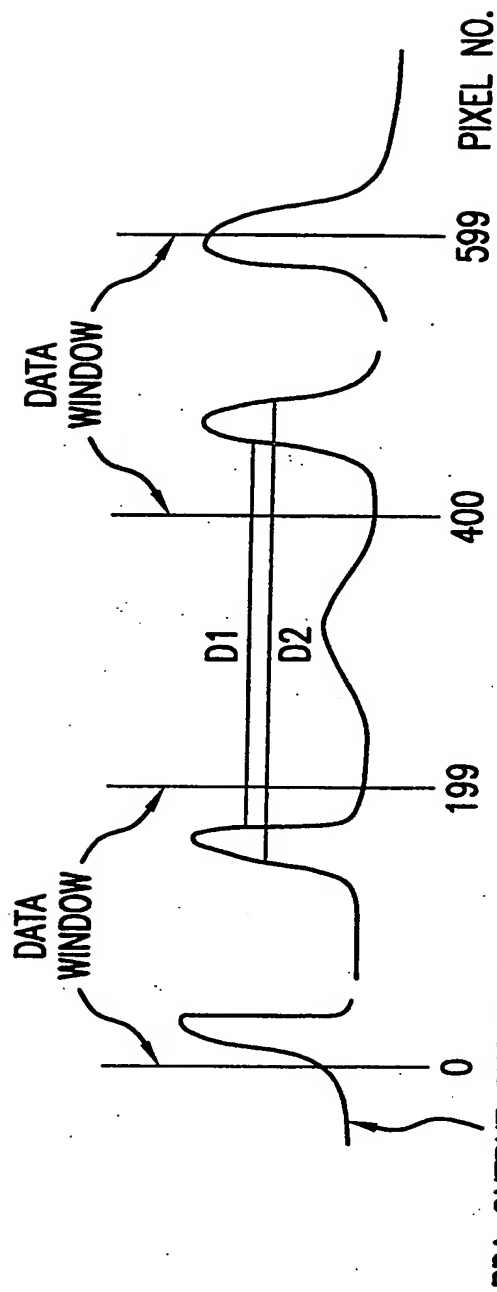


FIG. 14D

FIG. 14E

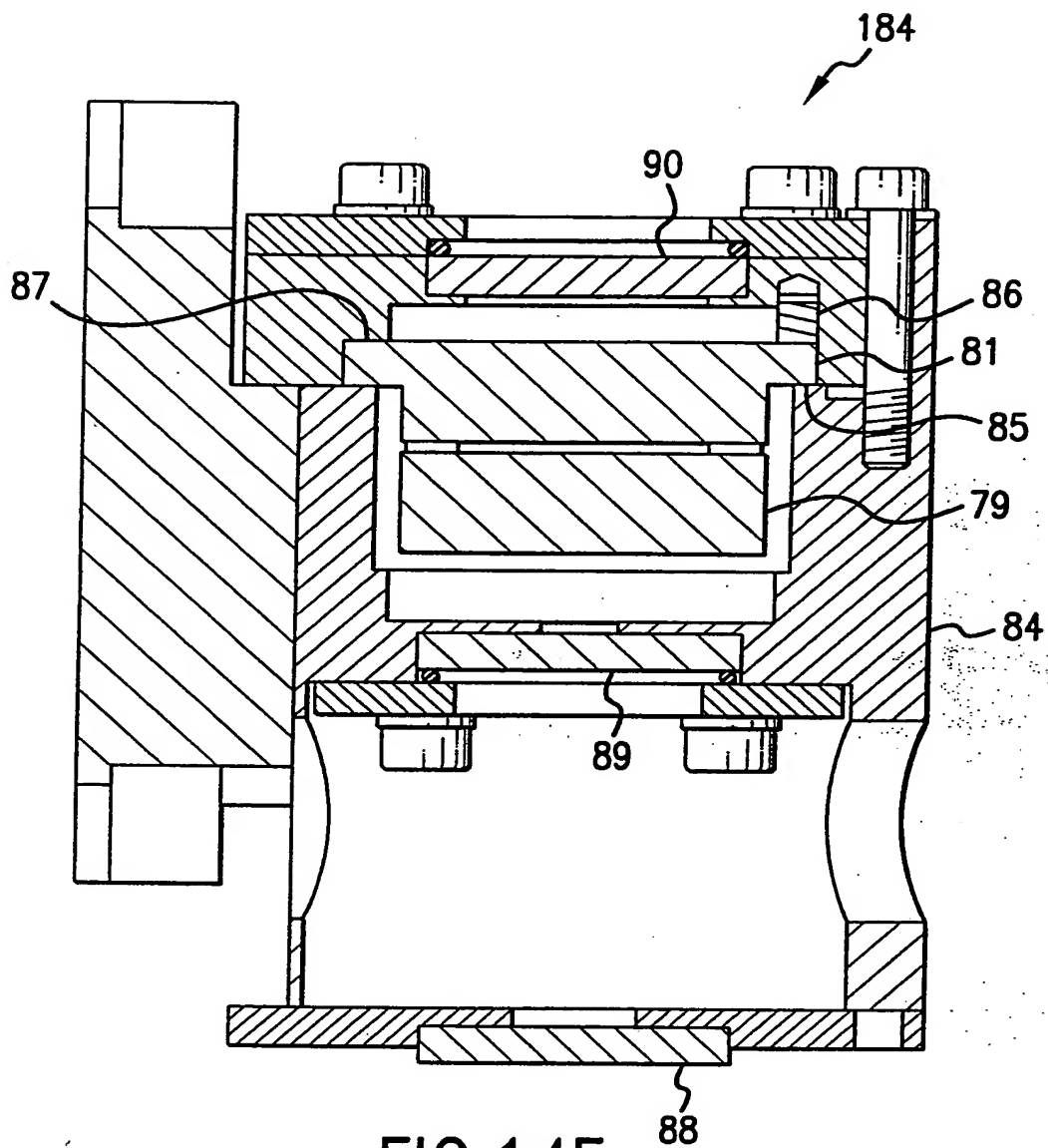


FIG. 14E



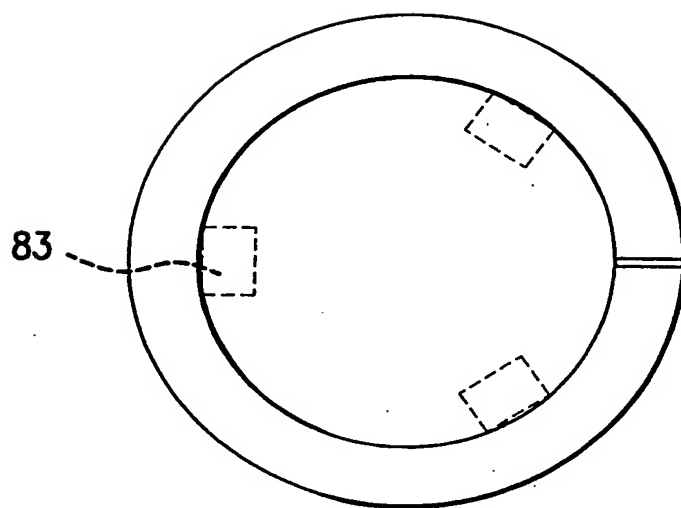


FIG. 14F

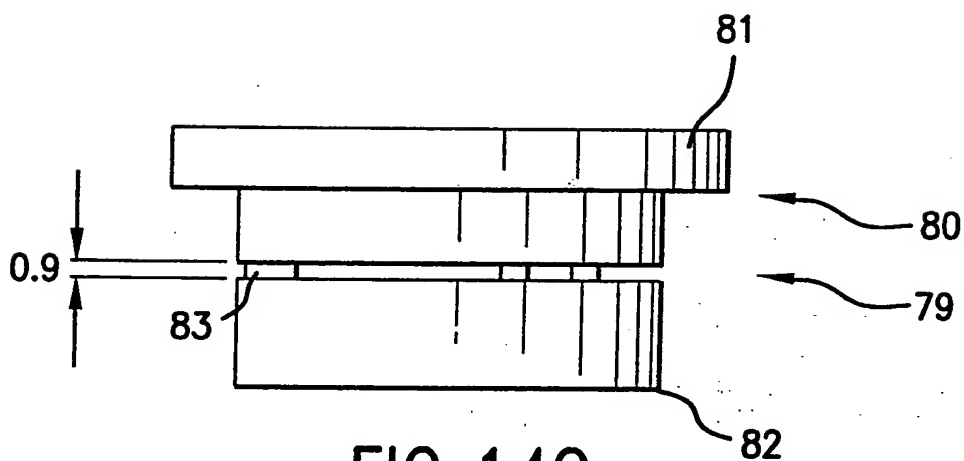


FIG. 14G

FIG. 14H

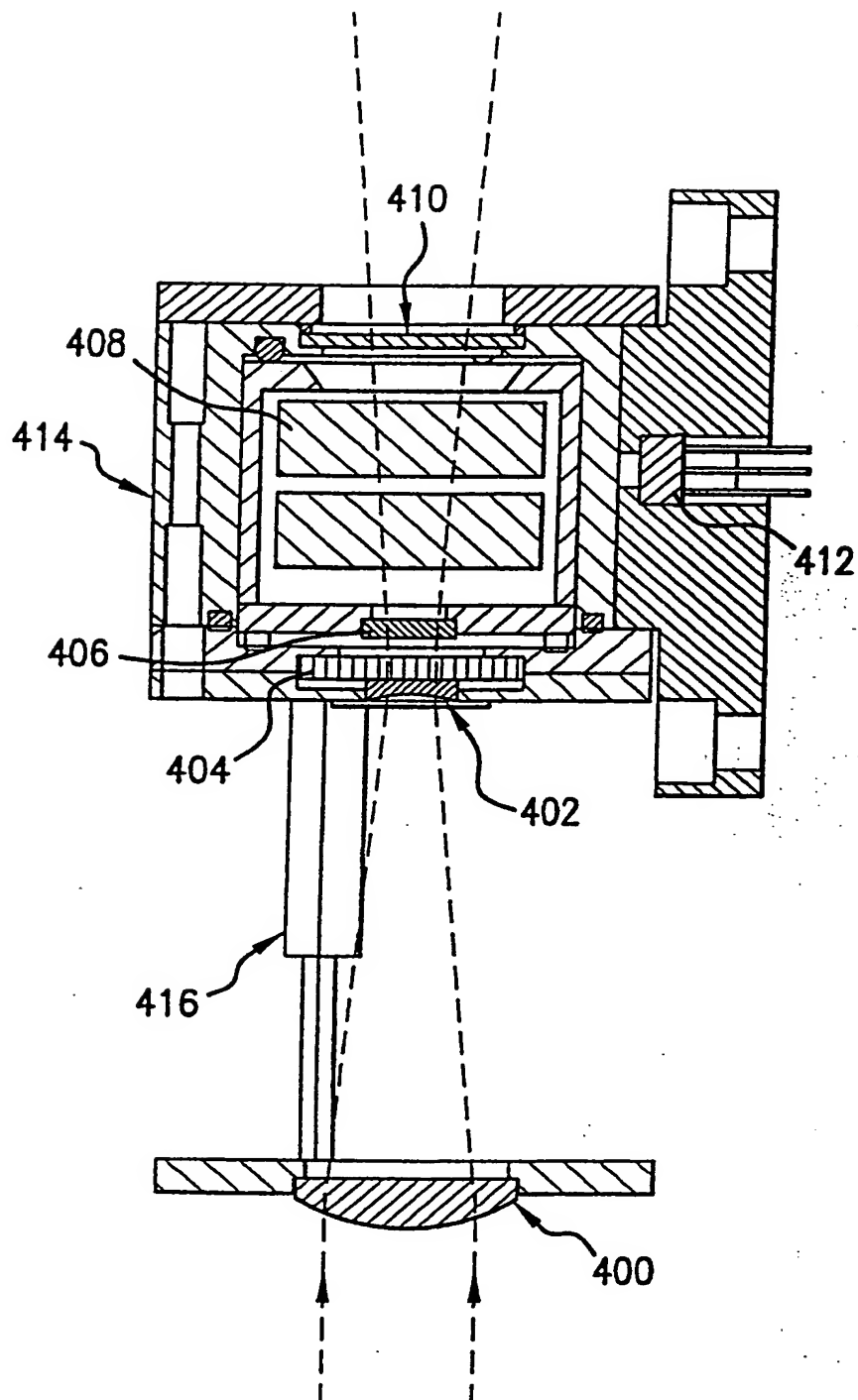


FIG.14H

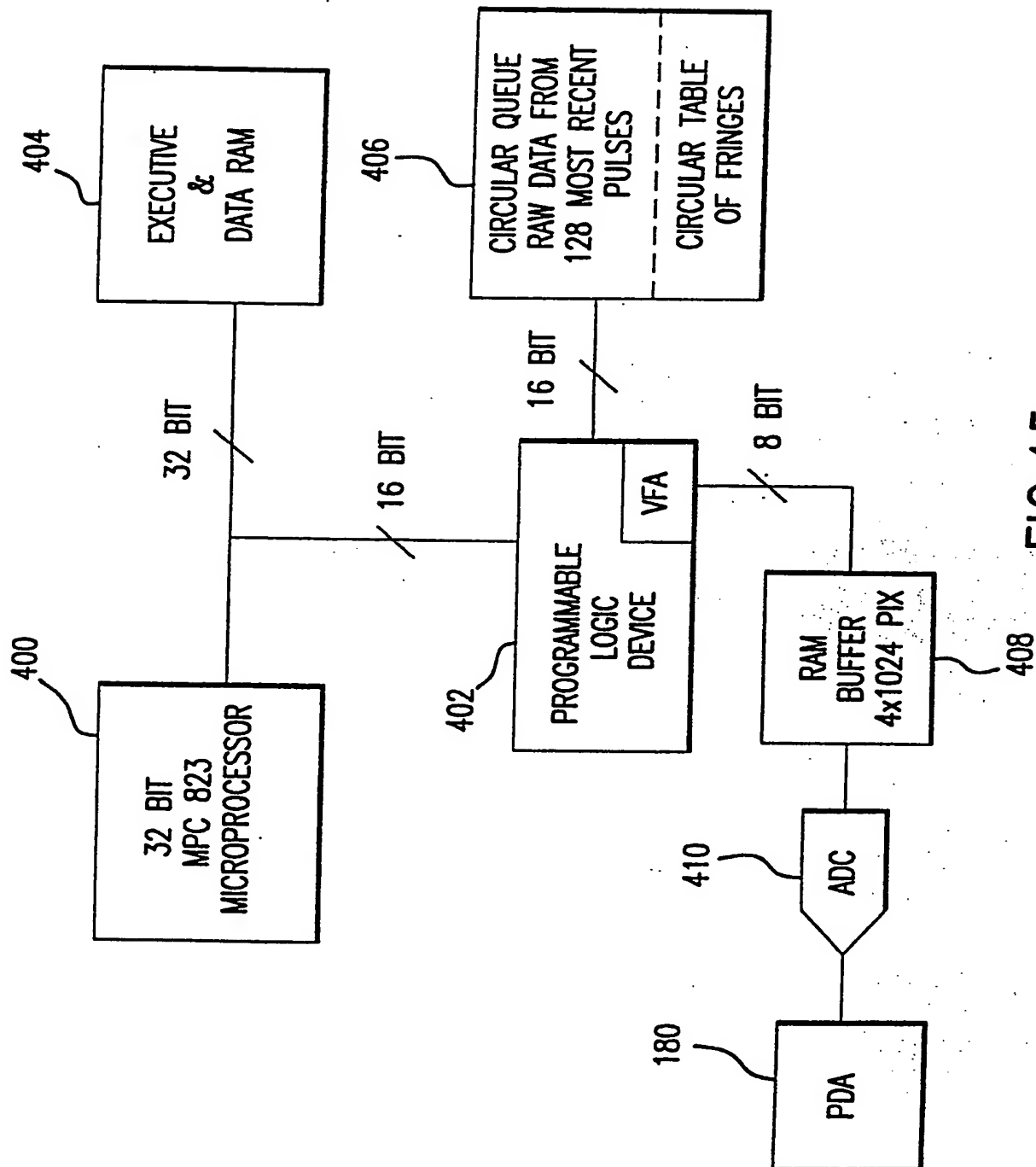


FIG.15

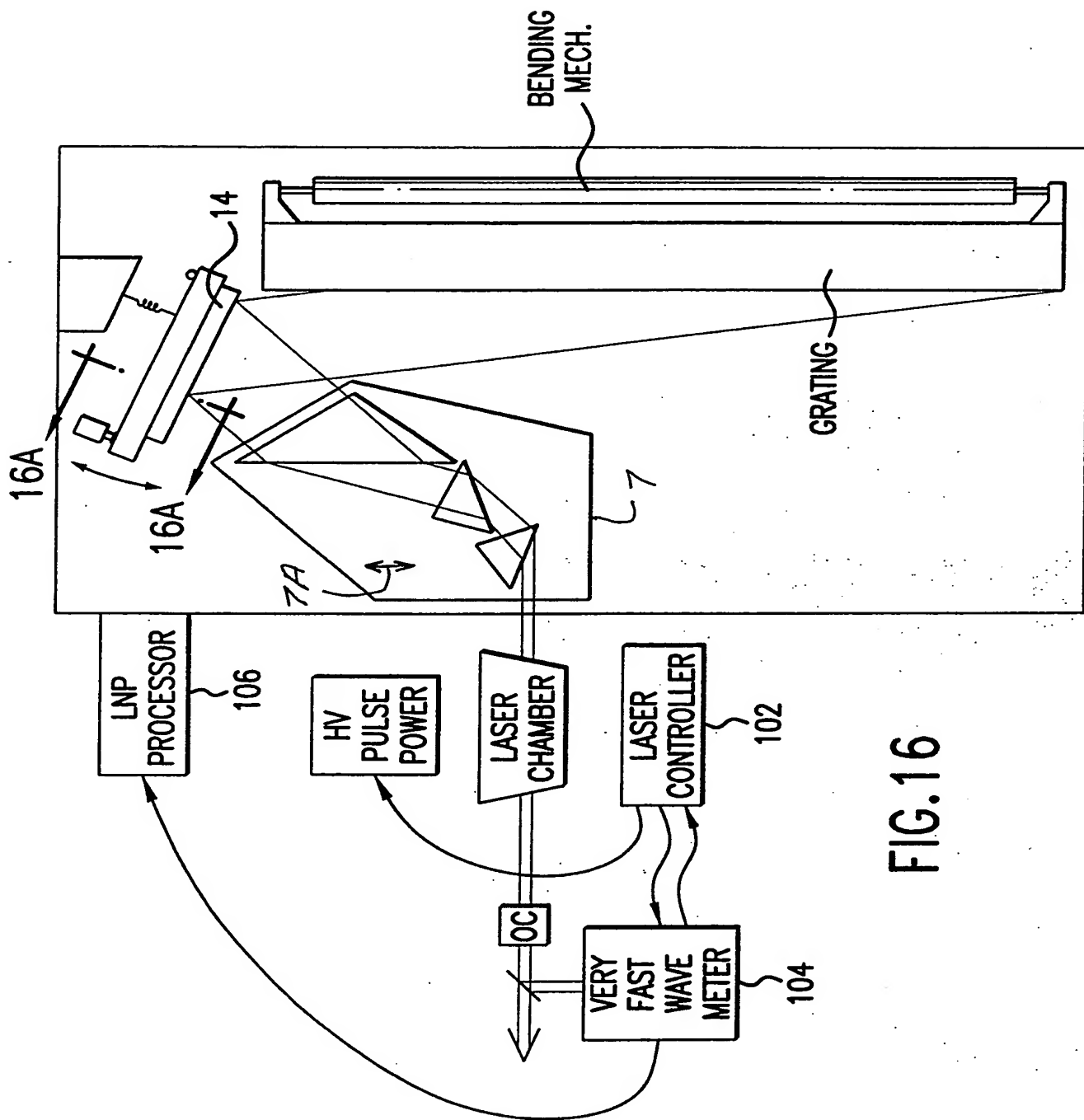
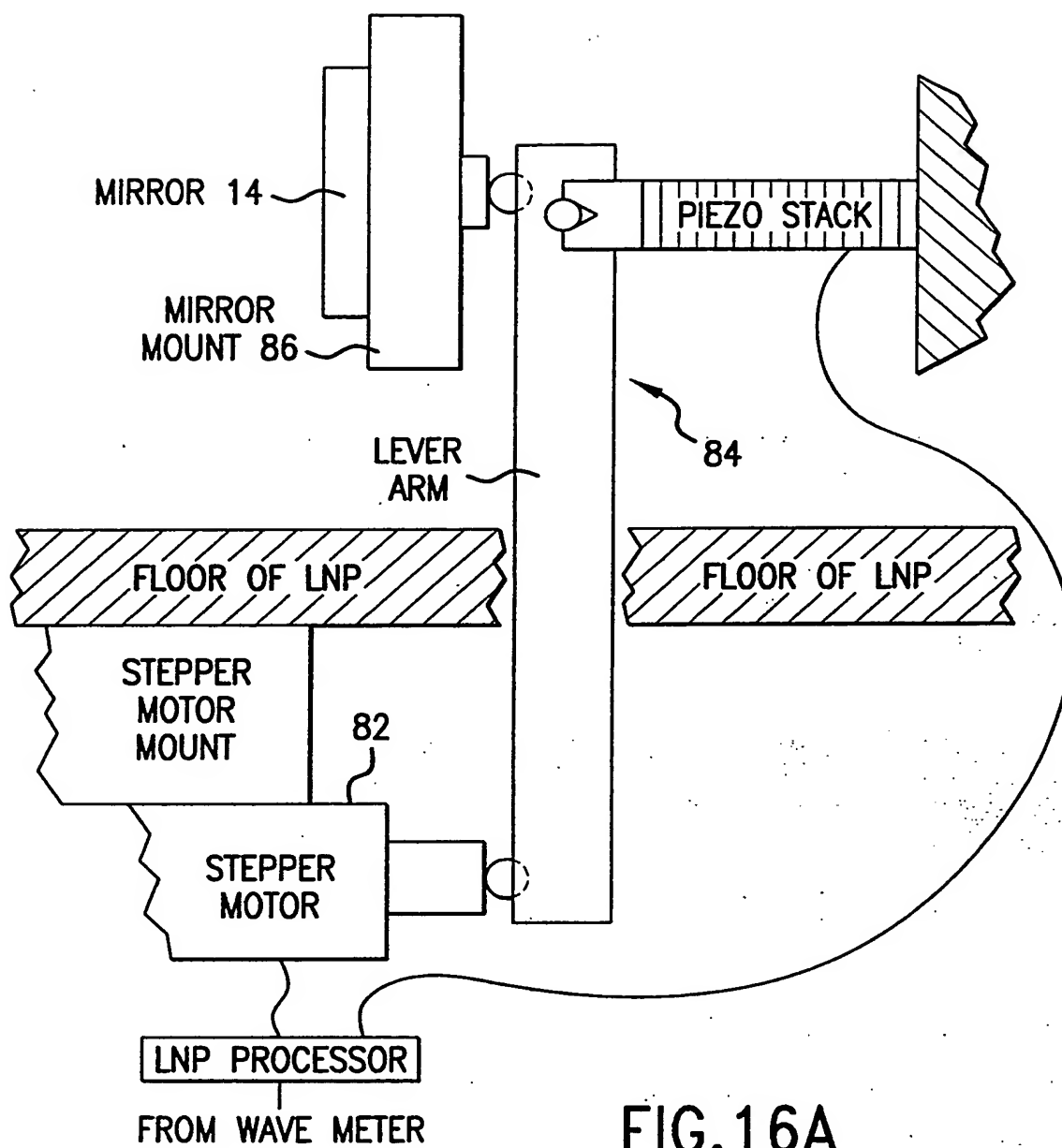


FIG. 16



**FIG. 16A**

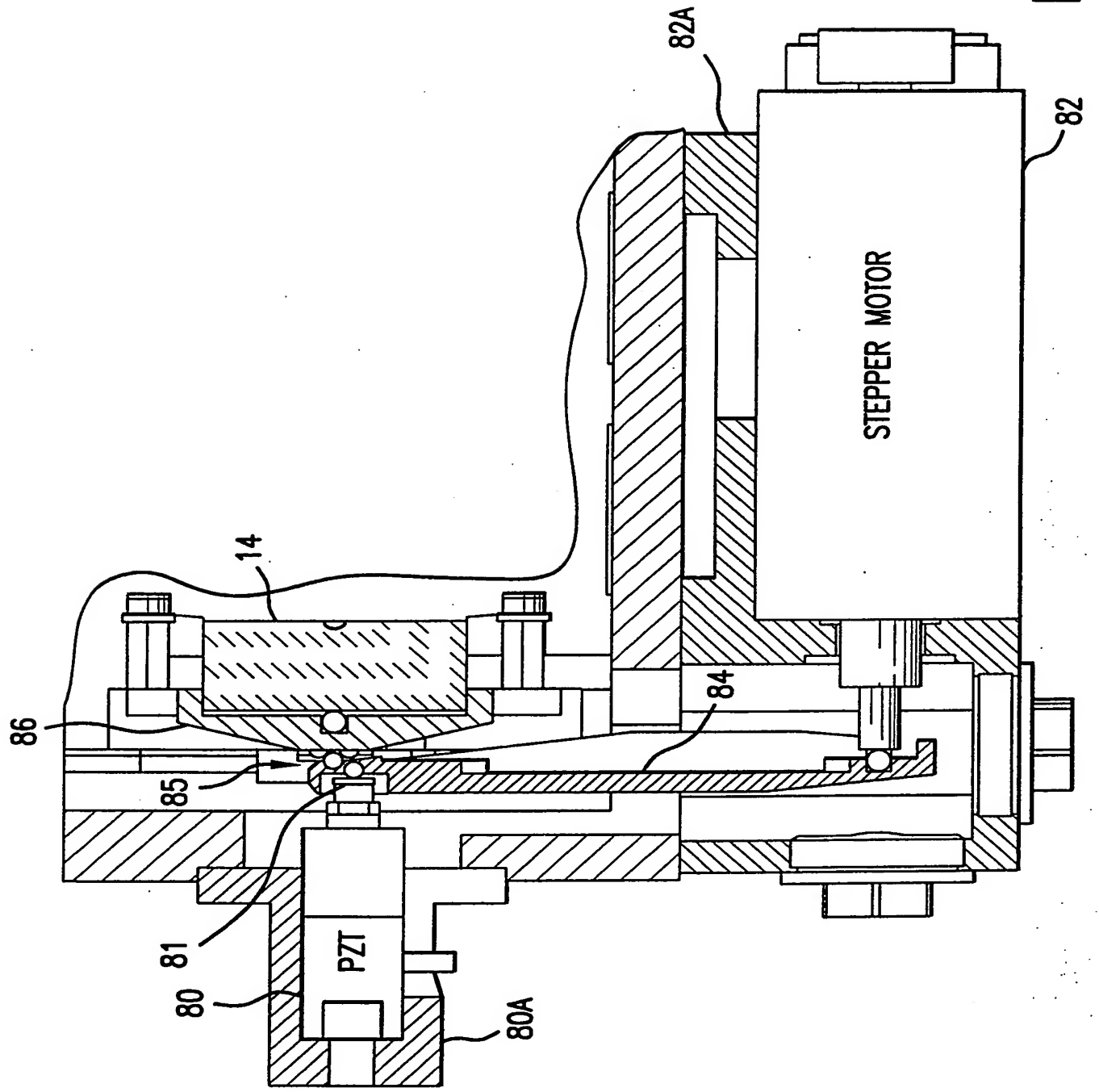


FIG. 16B1

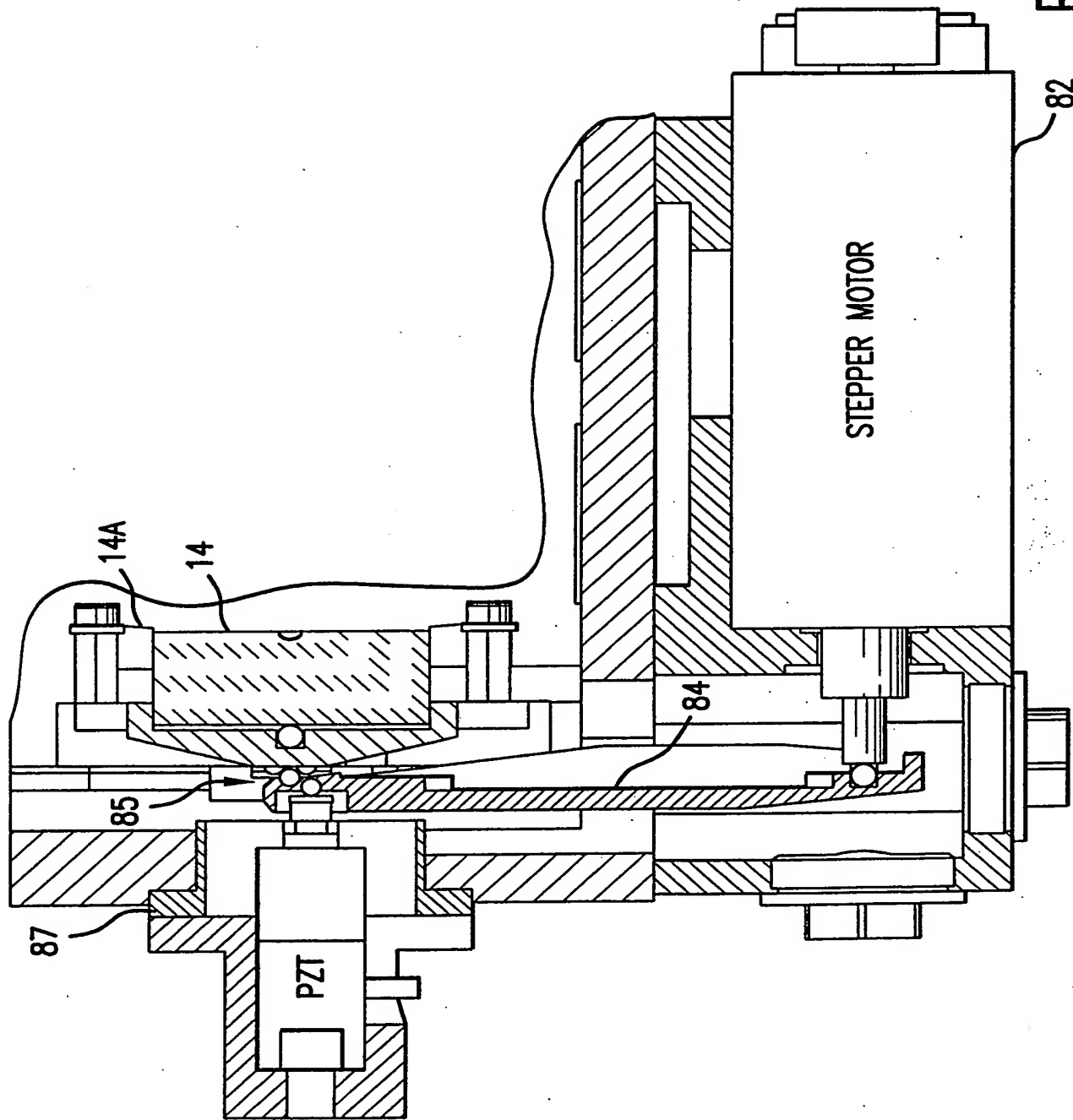


FIG. 16B2

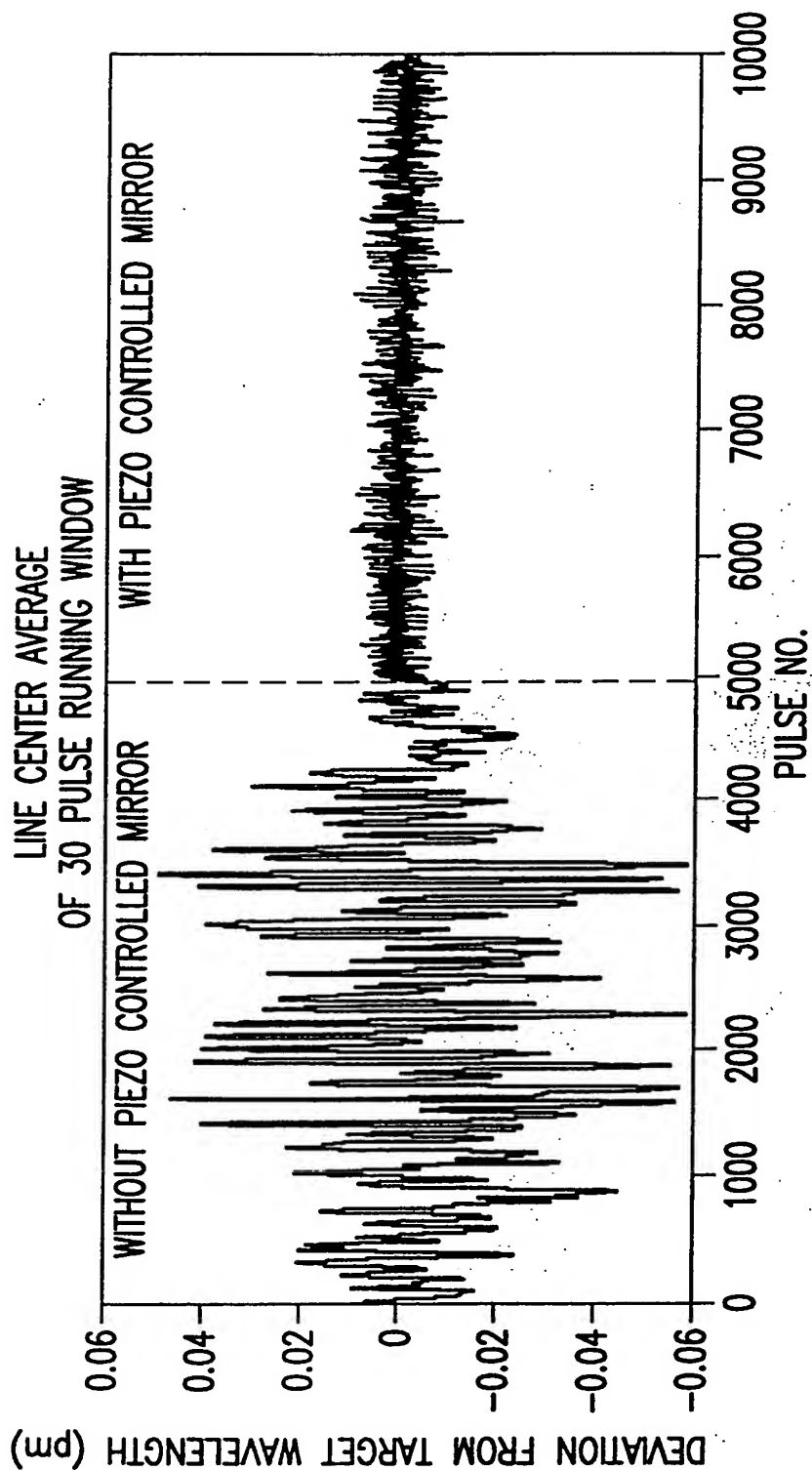


FIG. 16C



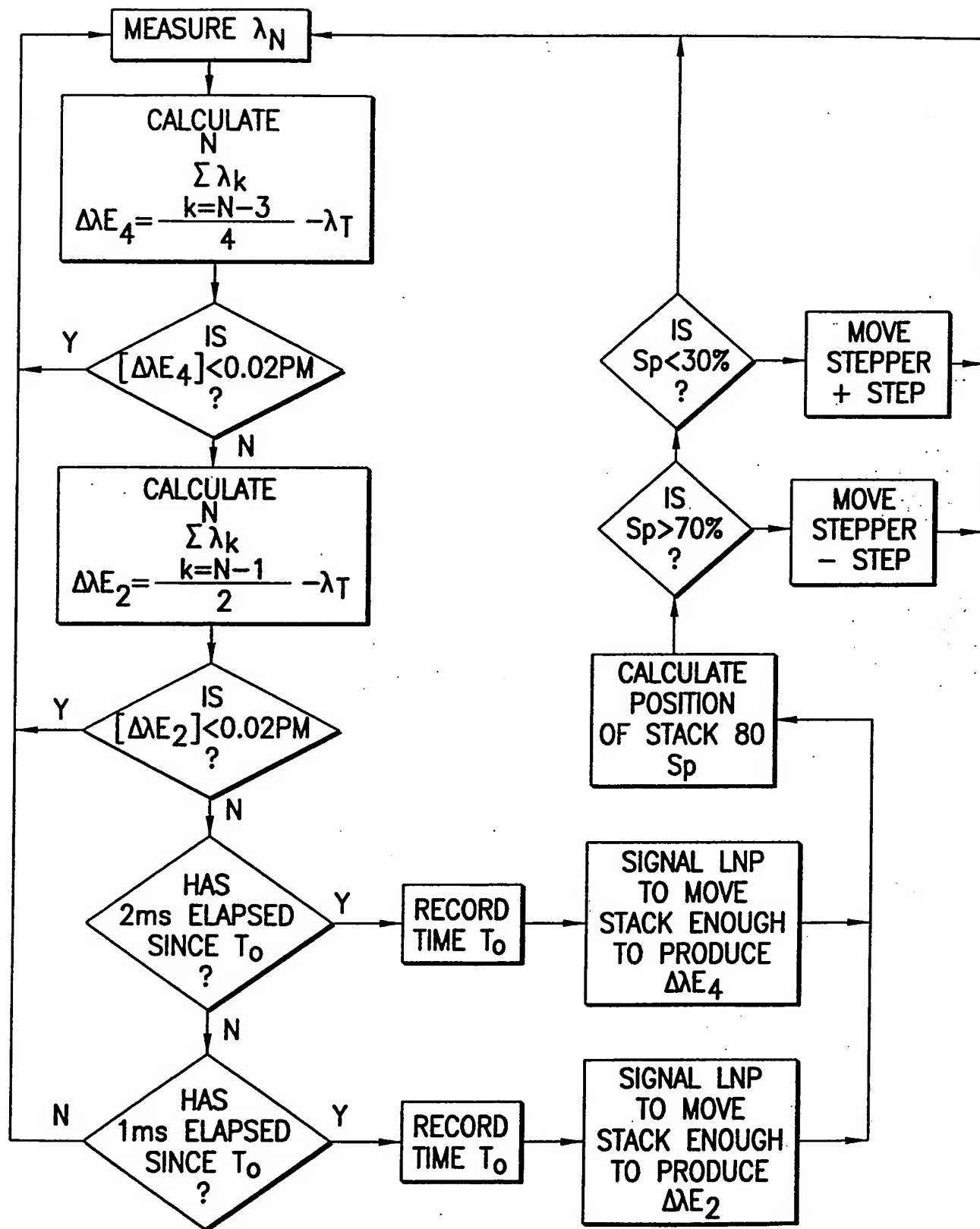


FIG.16D

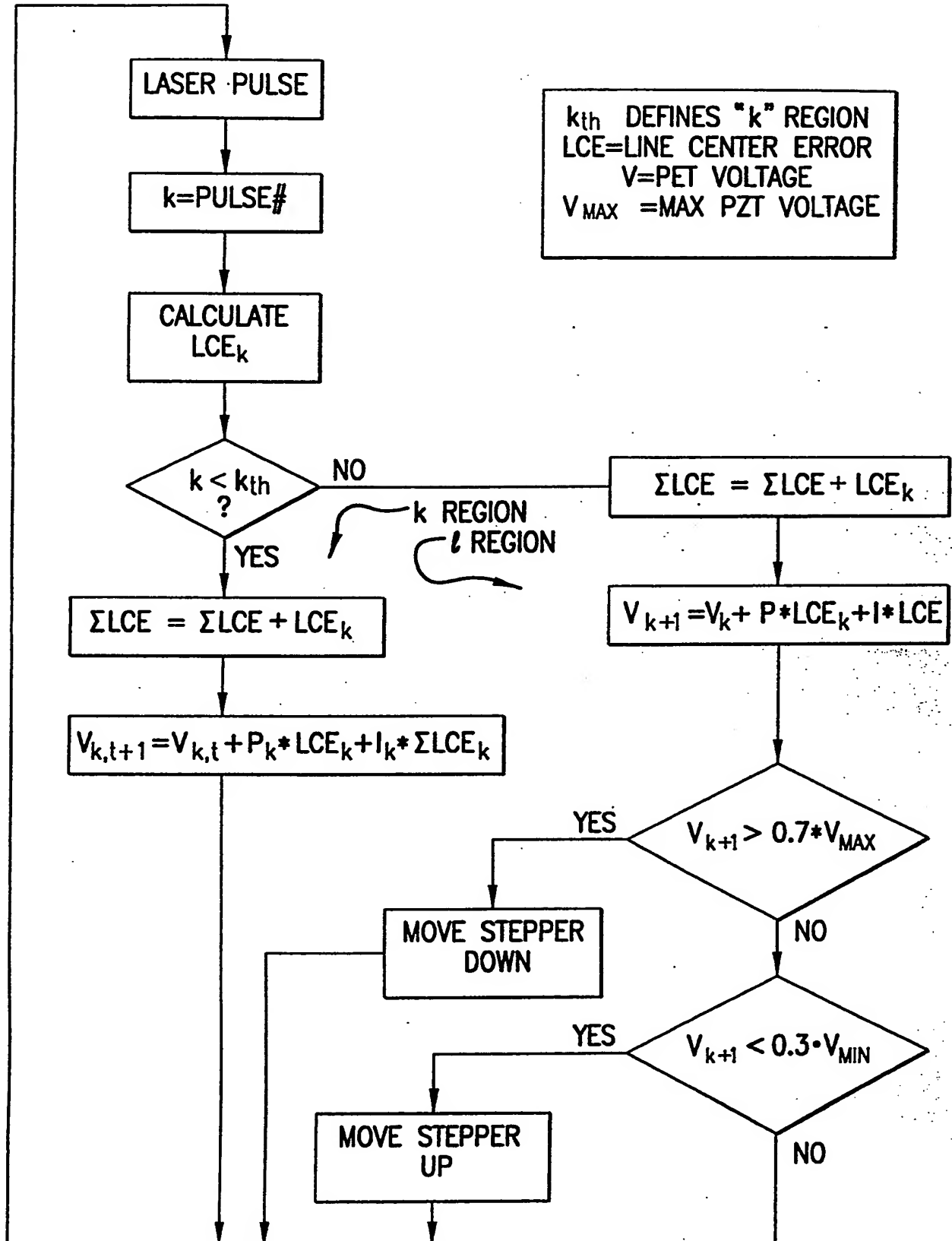


FIG.16E

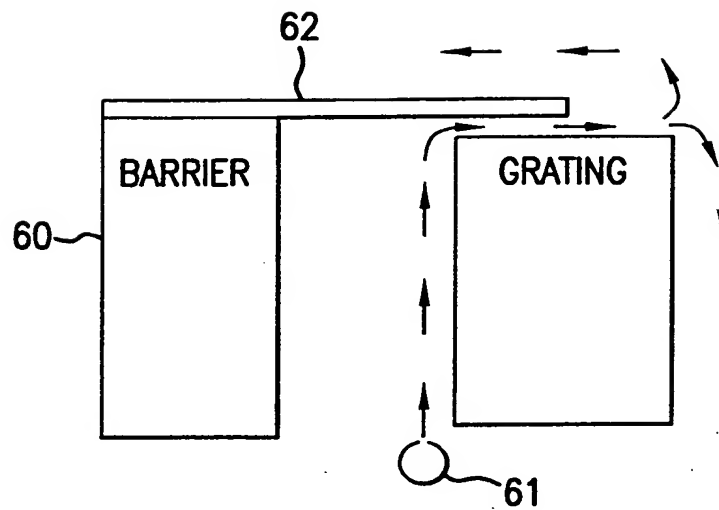


FIG.17

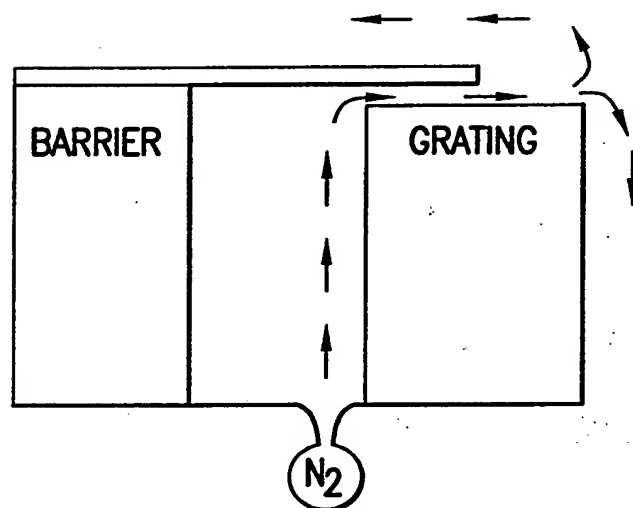


FIG.17A

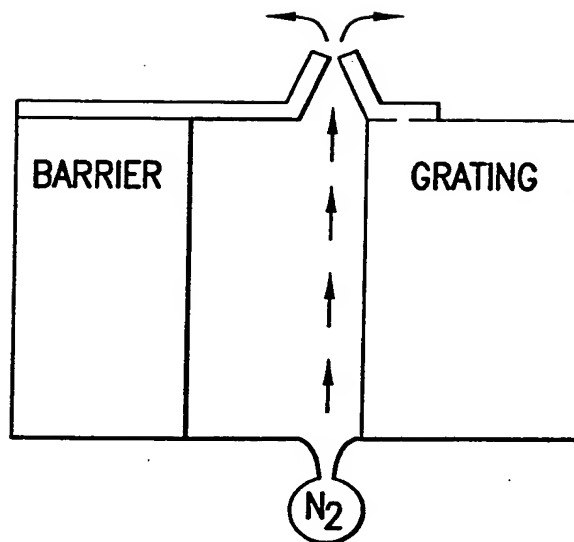


FIG.17B

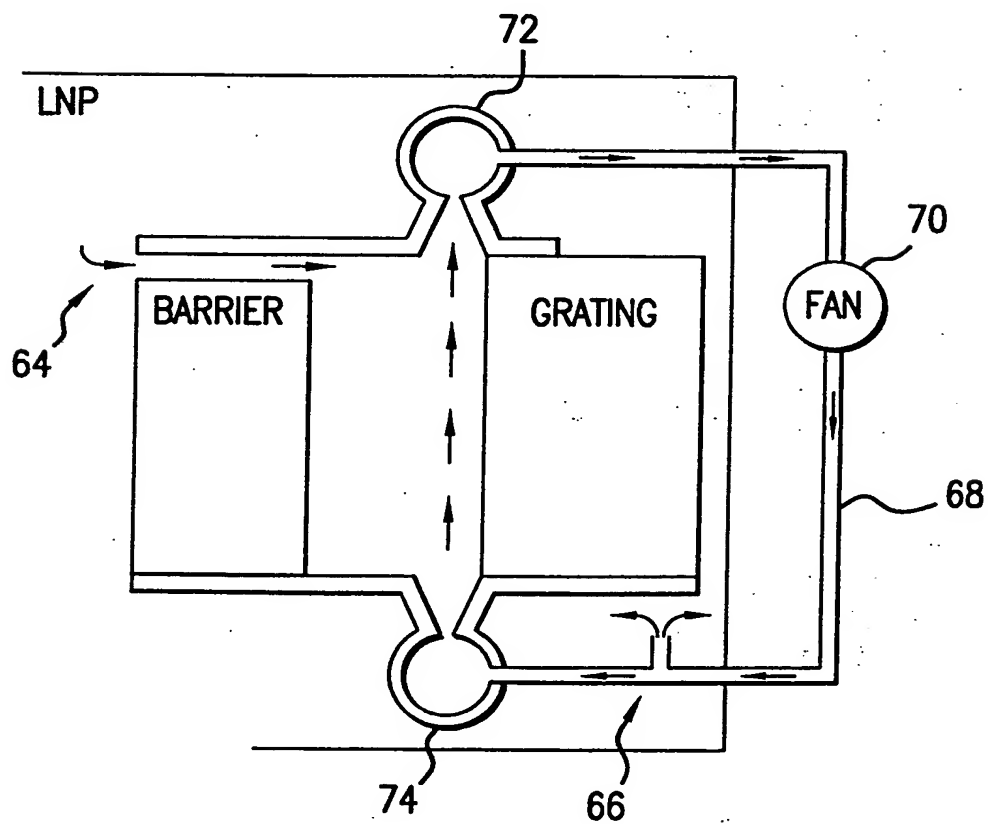


FIG.17C

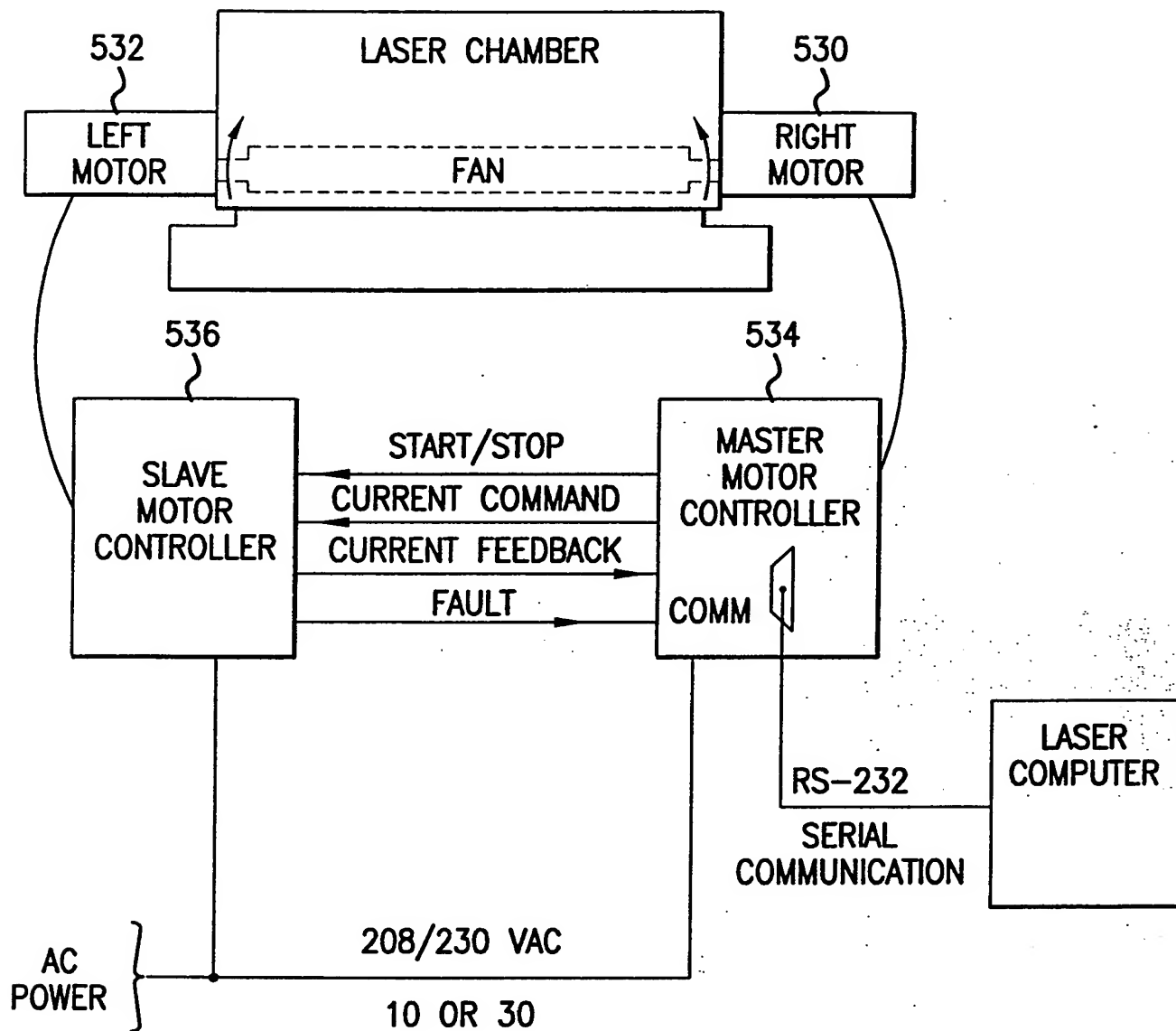


FIG. 18

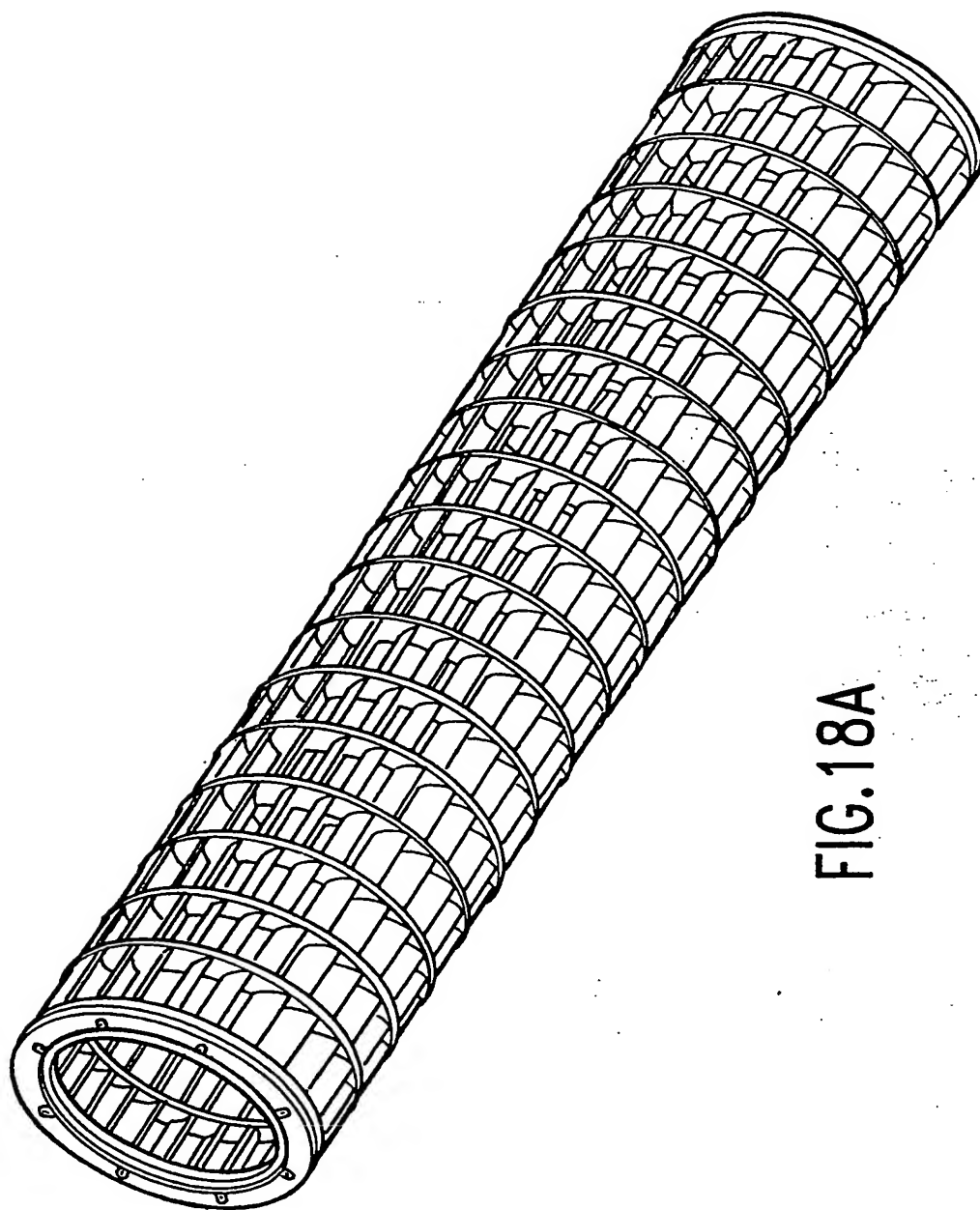
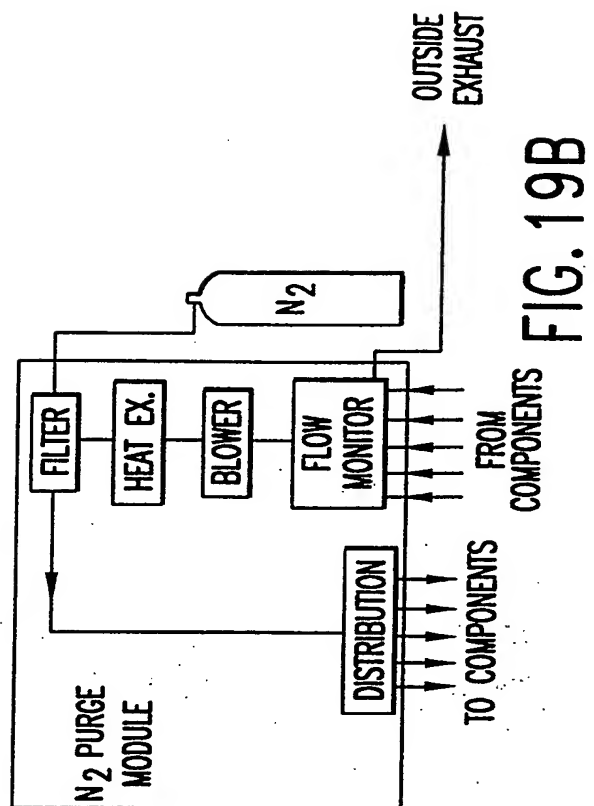
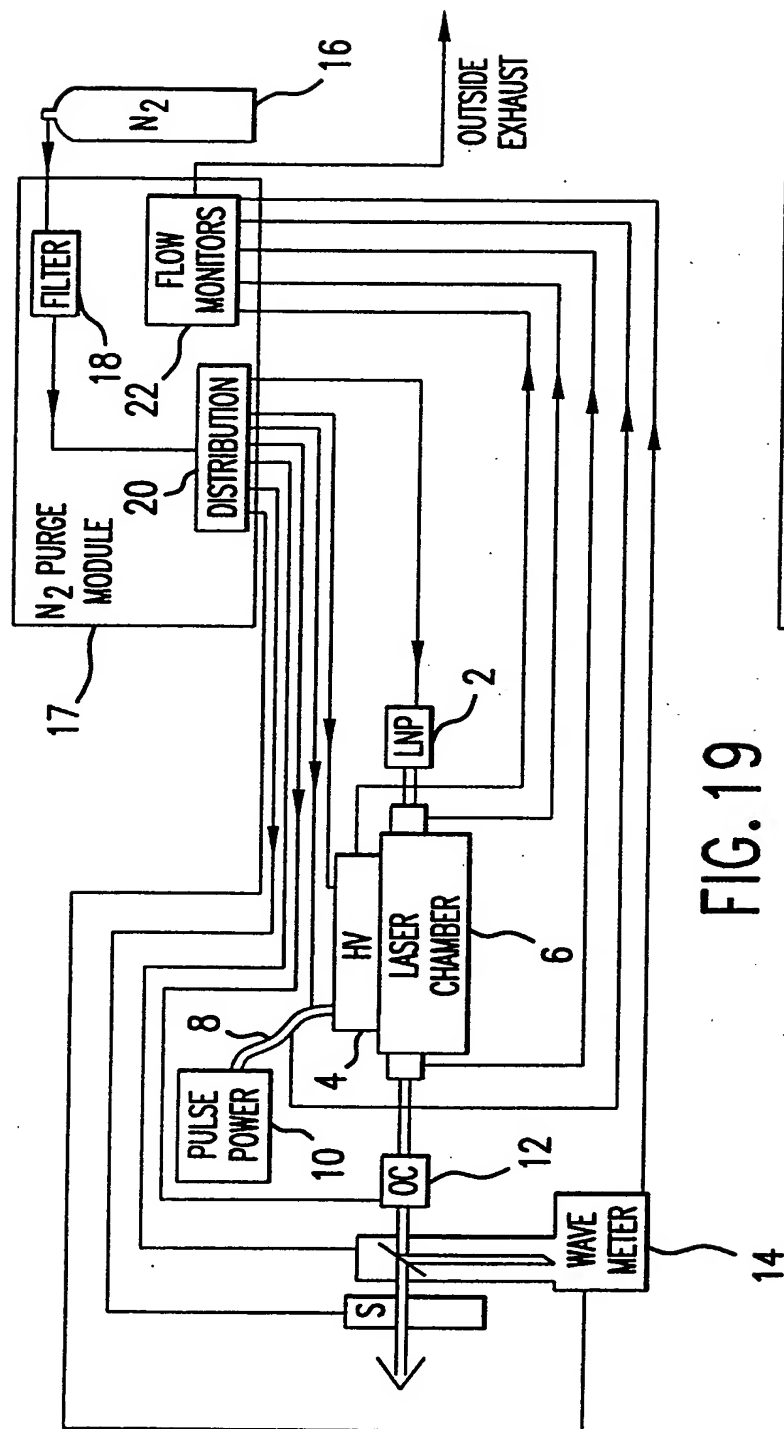


FIG. 18A



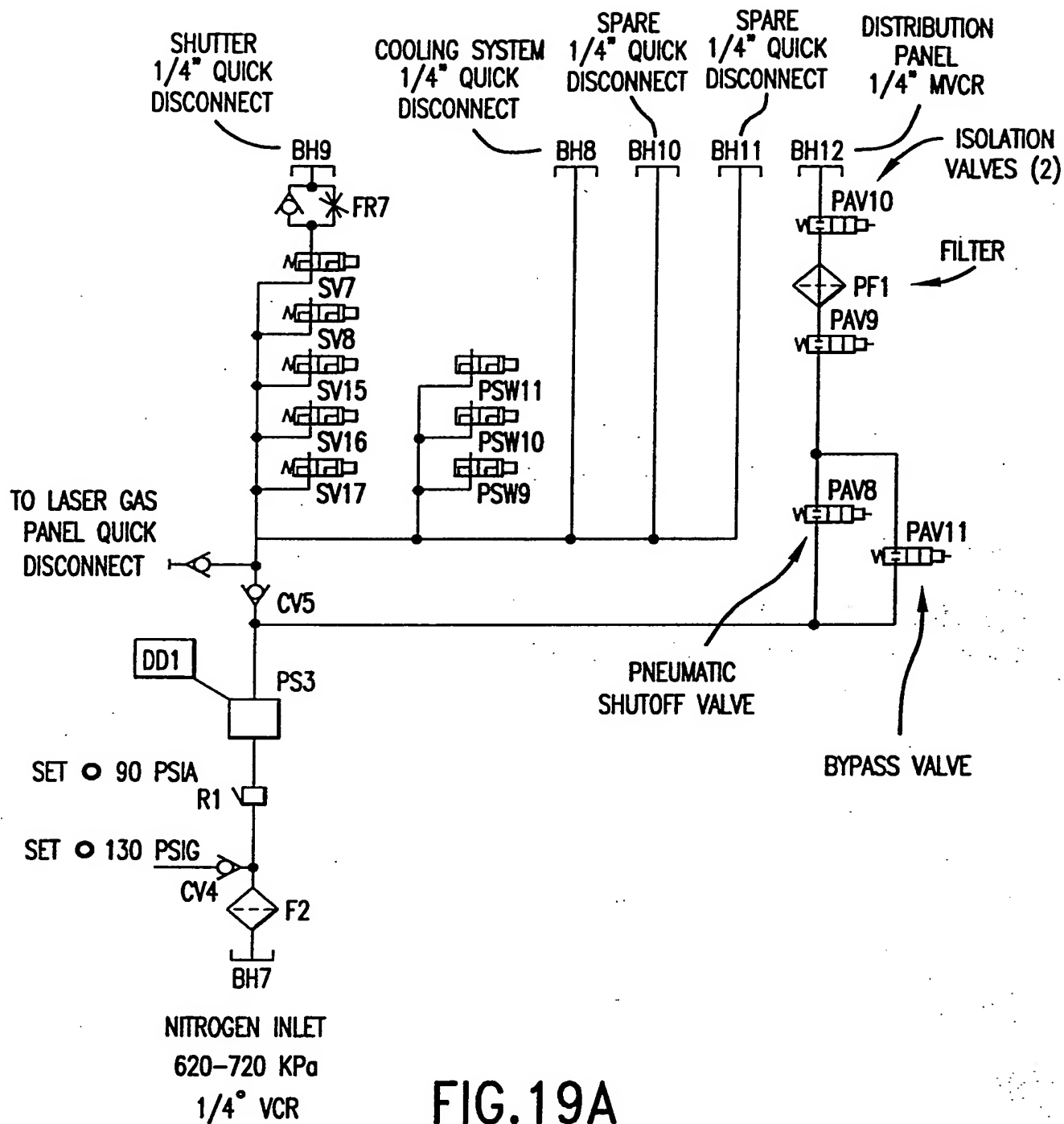


FIG.19A



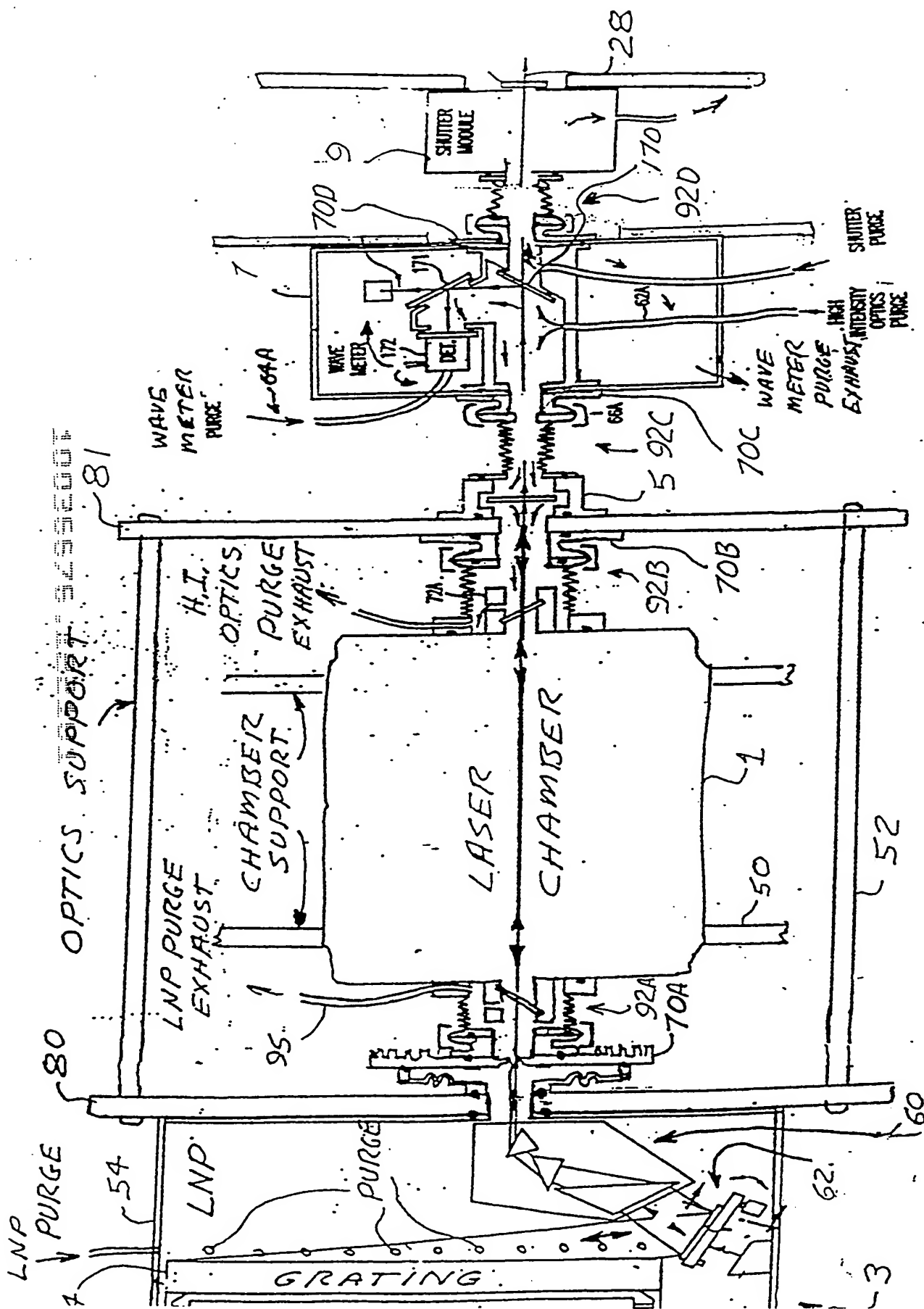
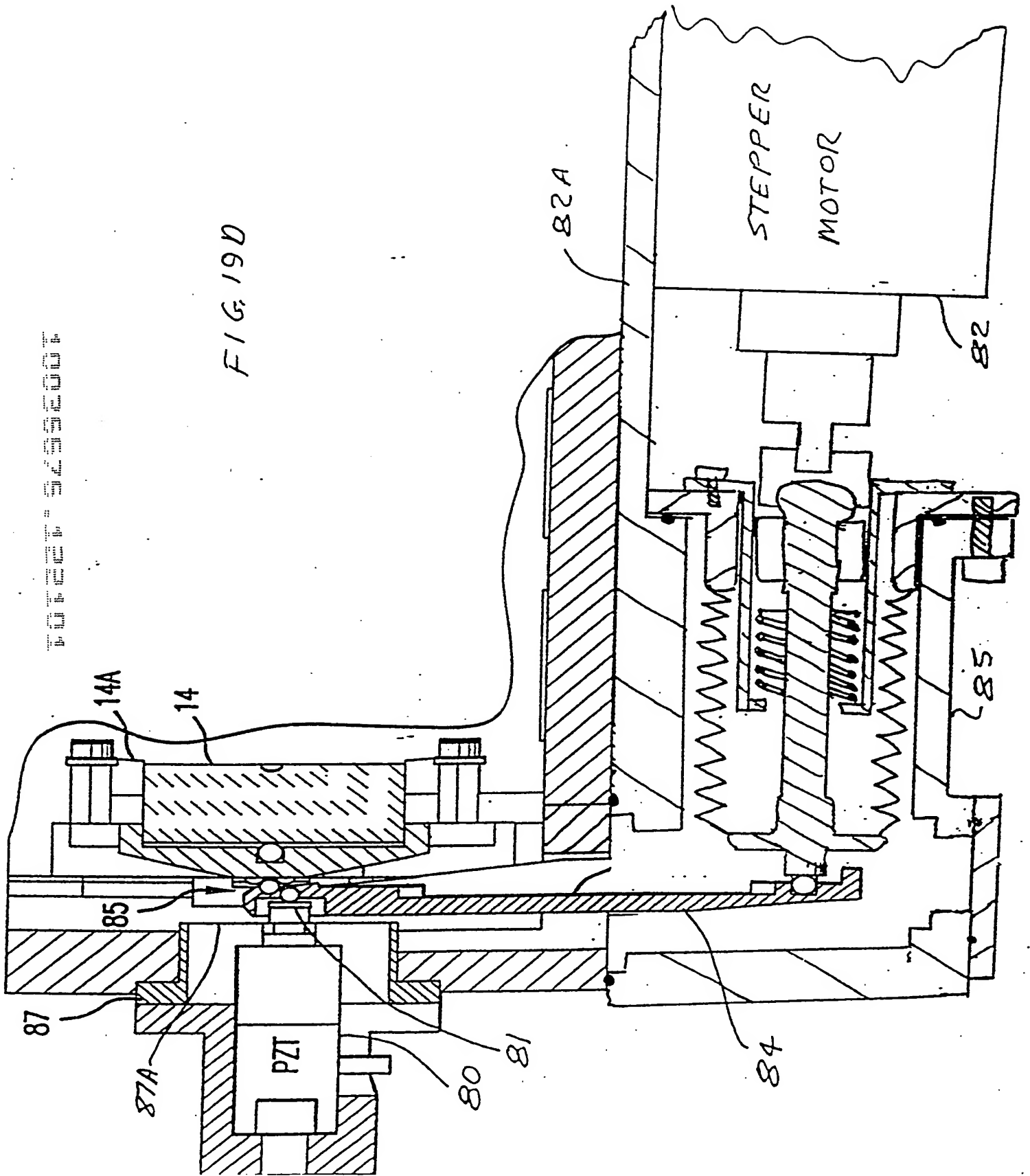


FIG. 19C

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FIG. 19D



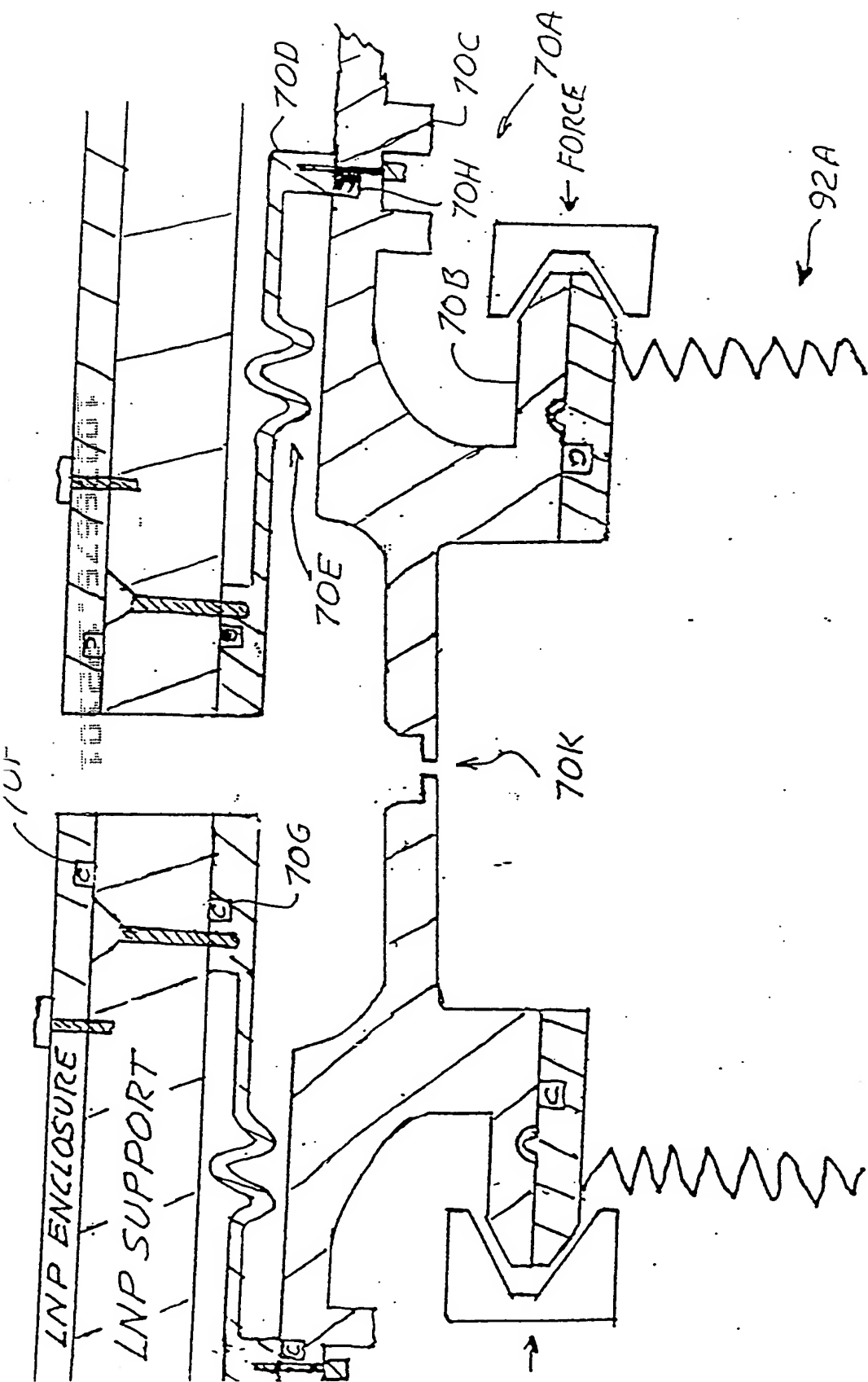


FIG. 19E

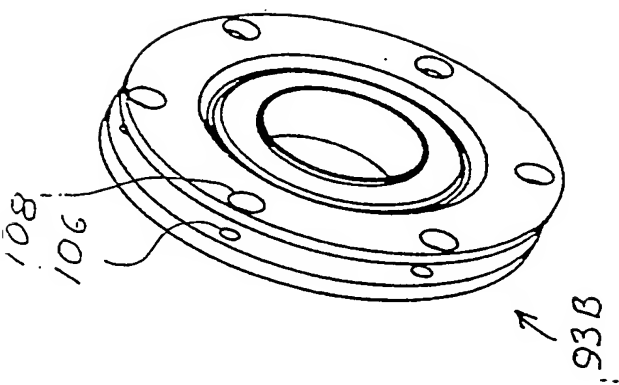


FIG. 19F2

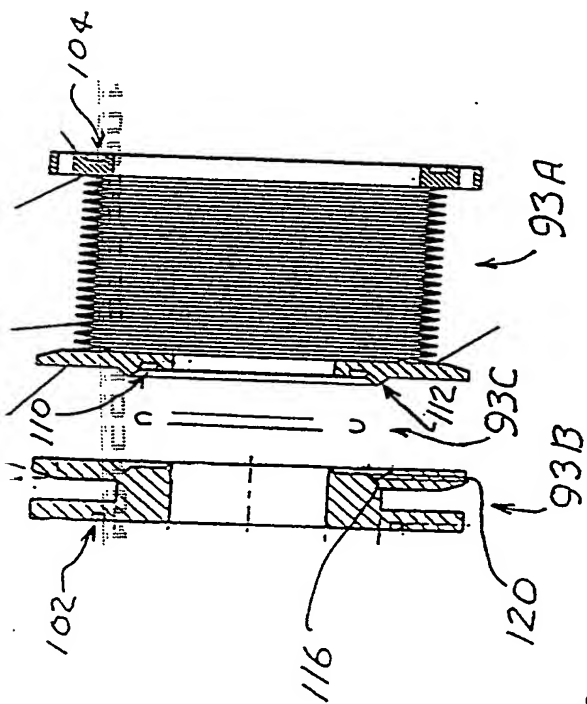


FIG. 19F1

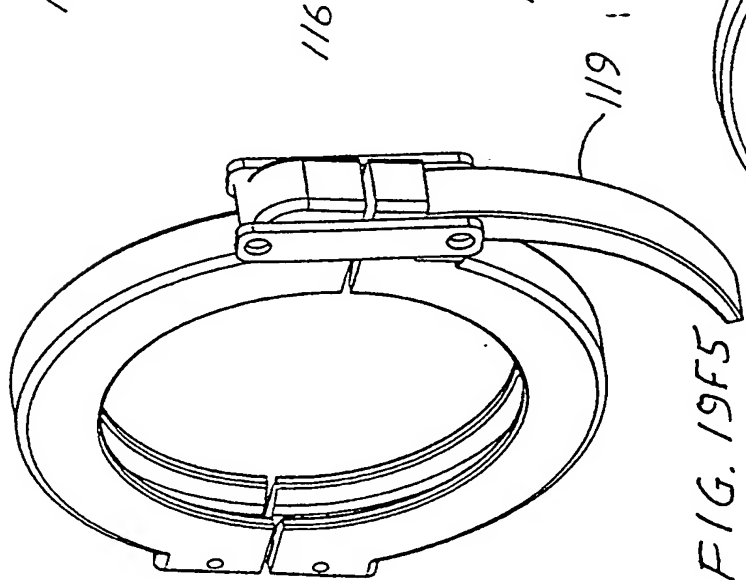


FIG. 19F5

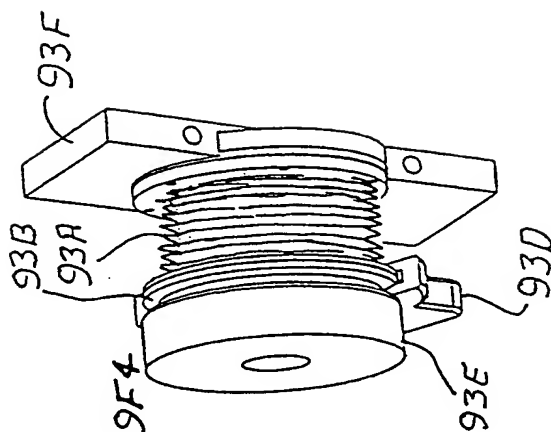


FIG. 19F4

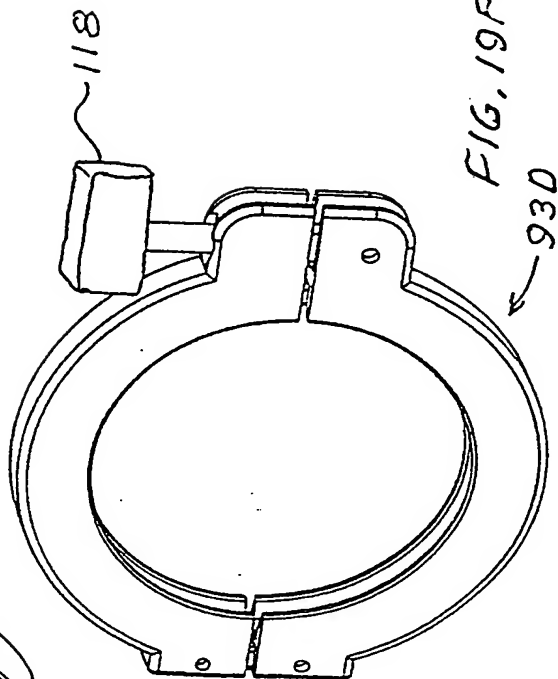


FIG. 19F3

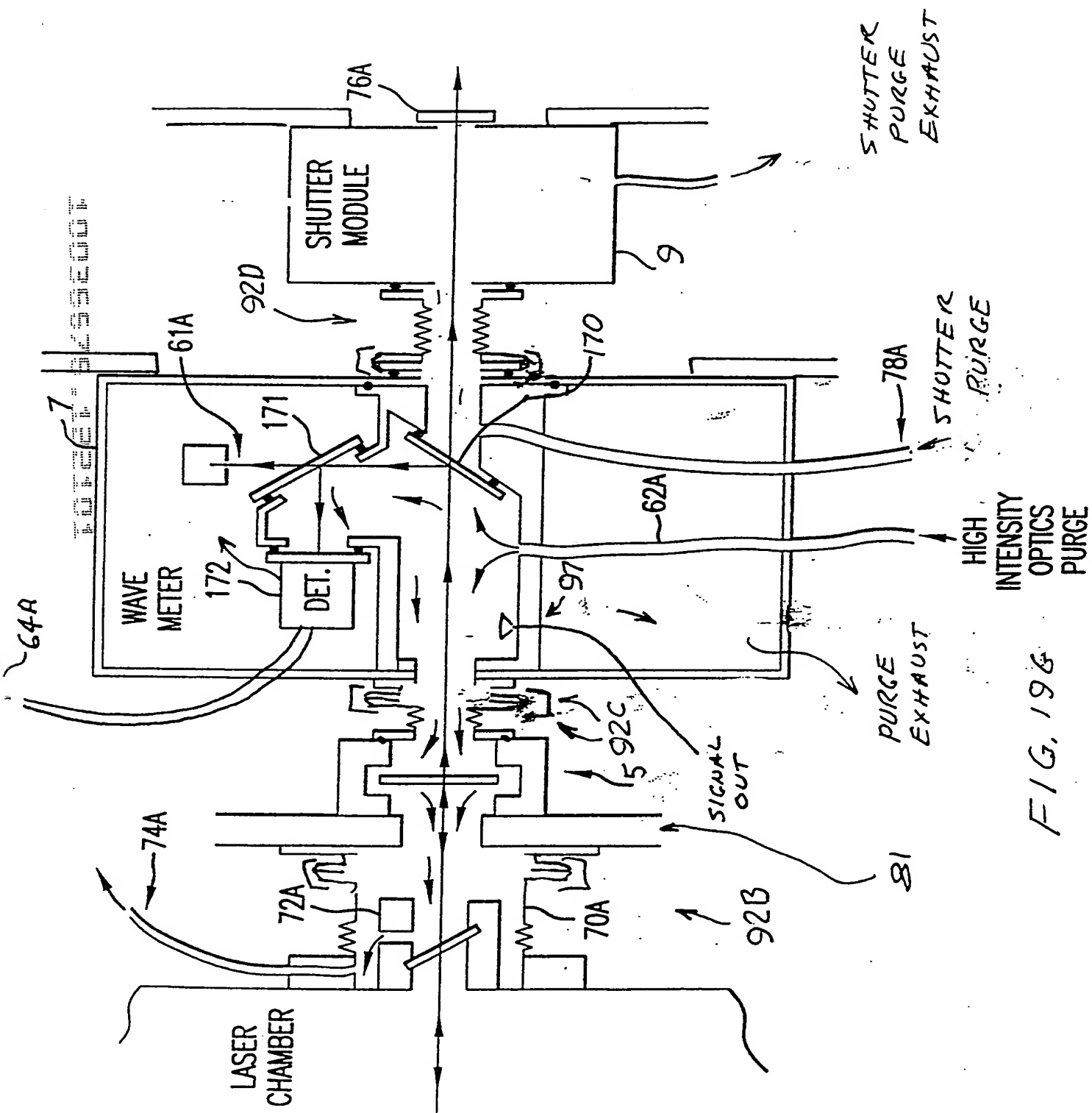
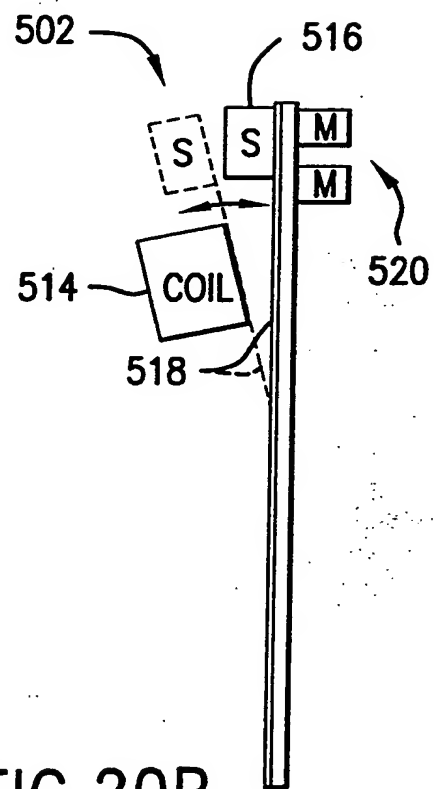
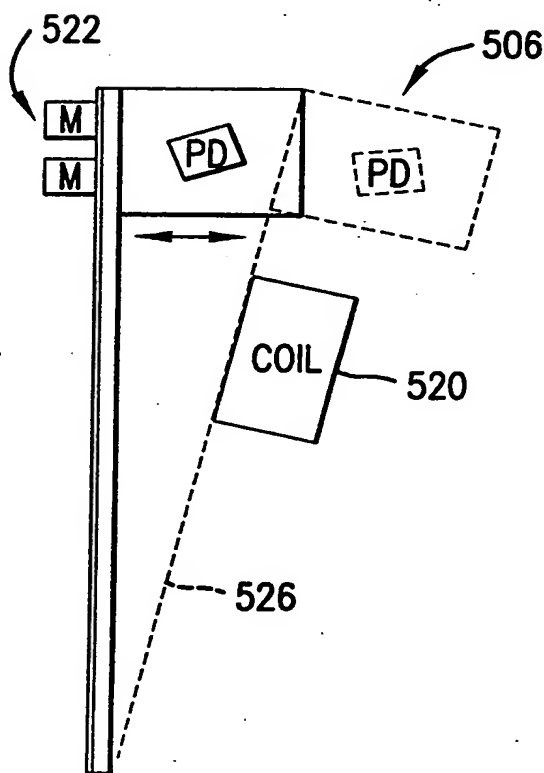
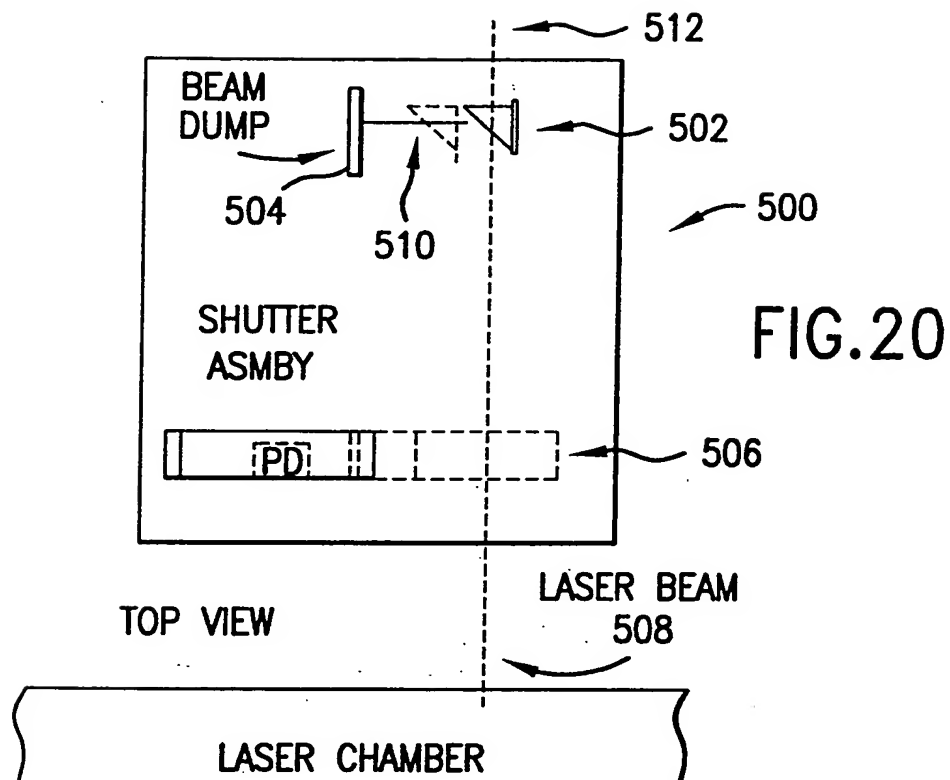


FIG. 196



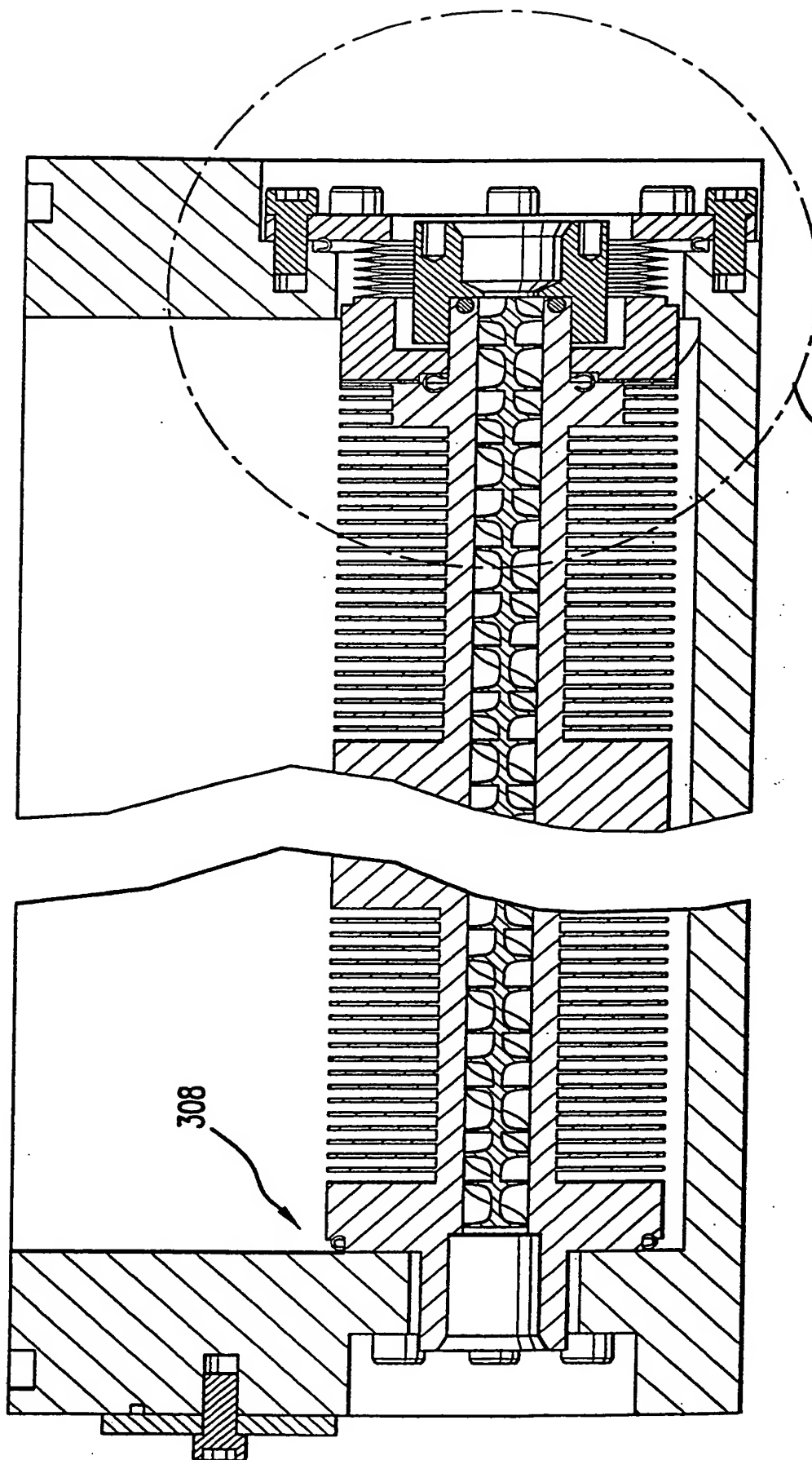


FIG.21A

FIG.21

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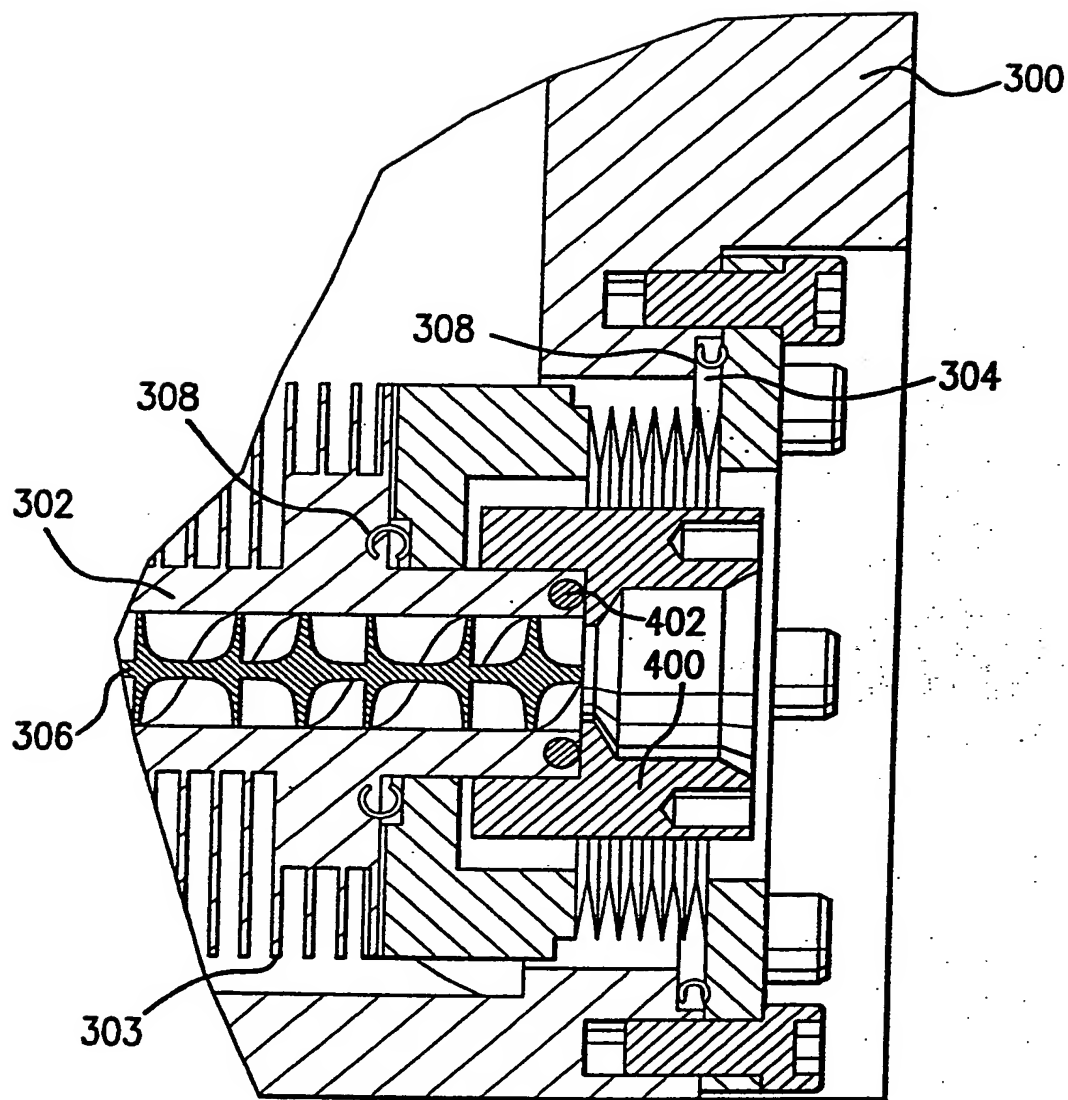


FIG. 21A



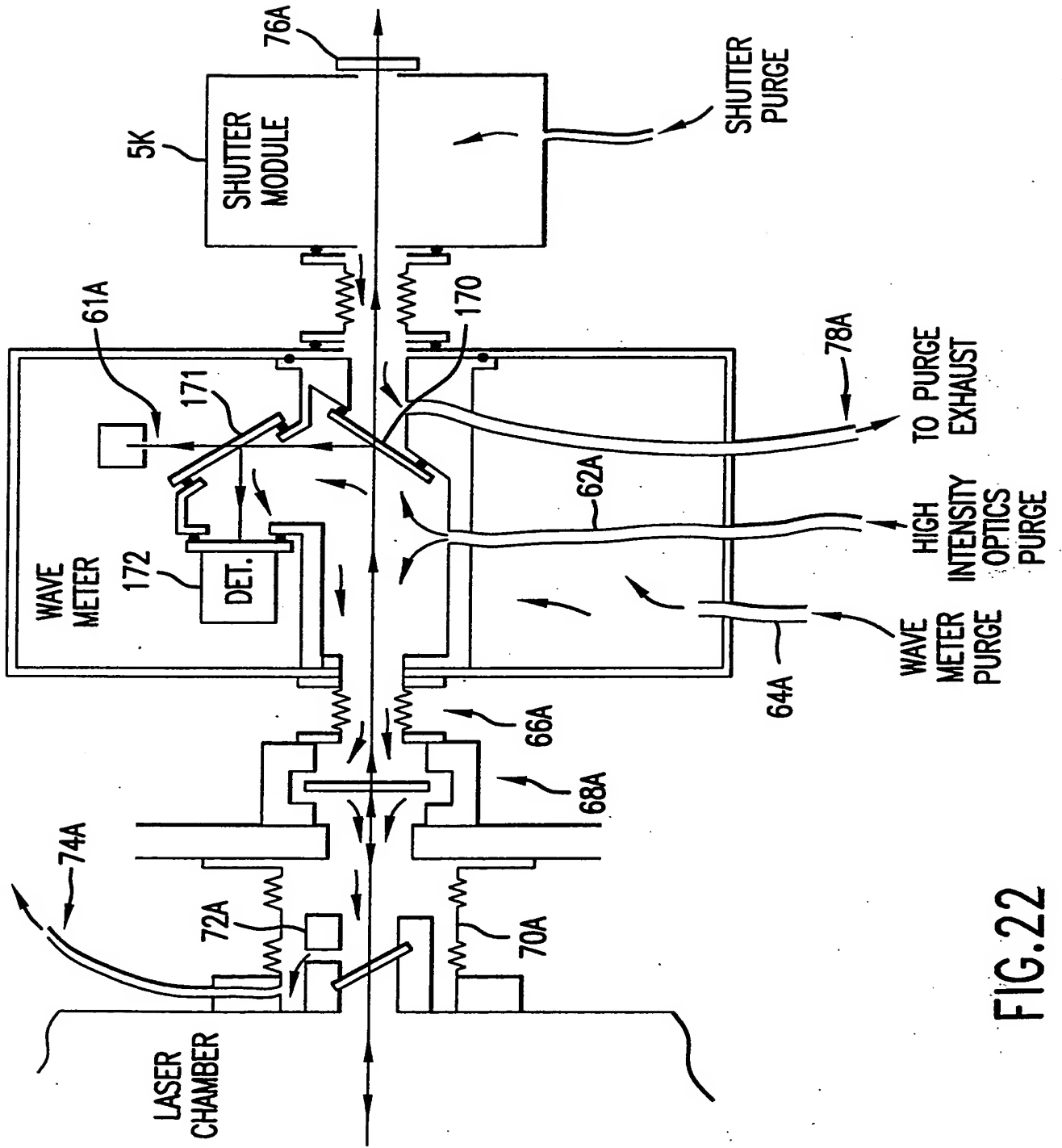


FIG. 22

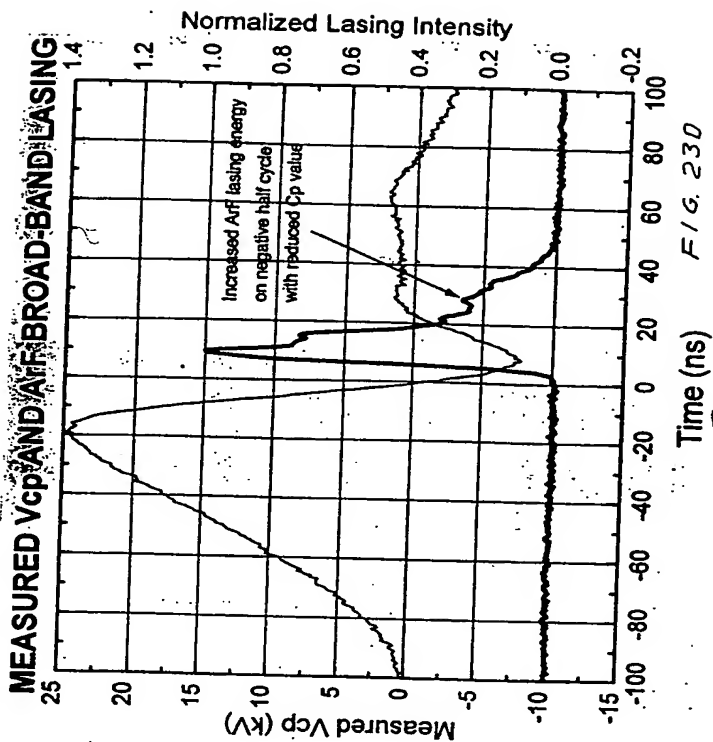
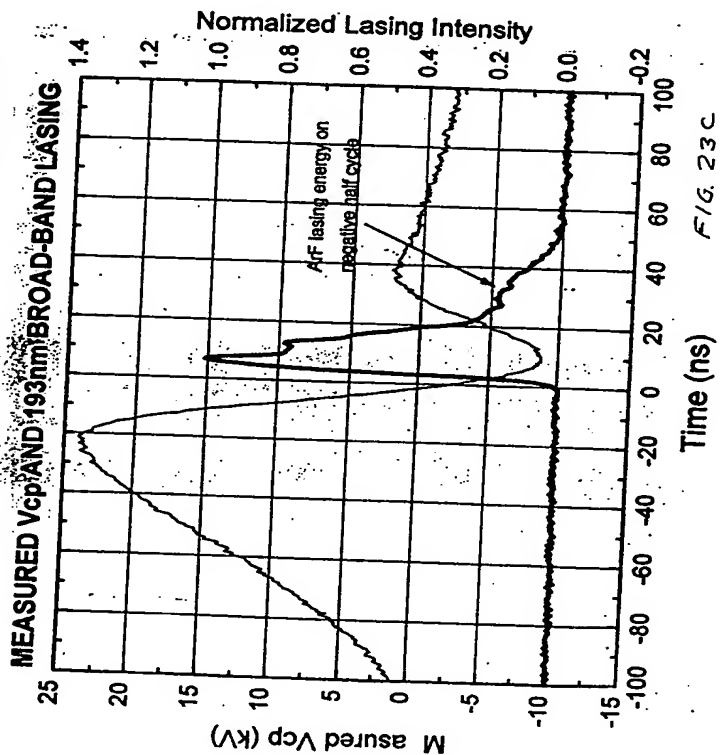
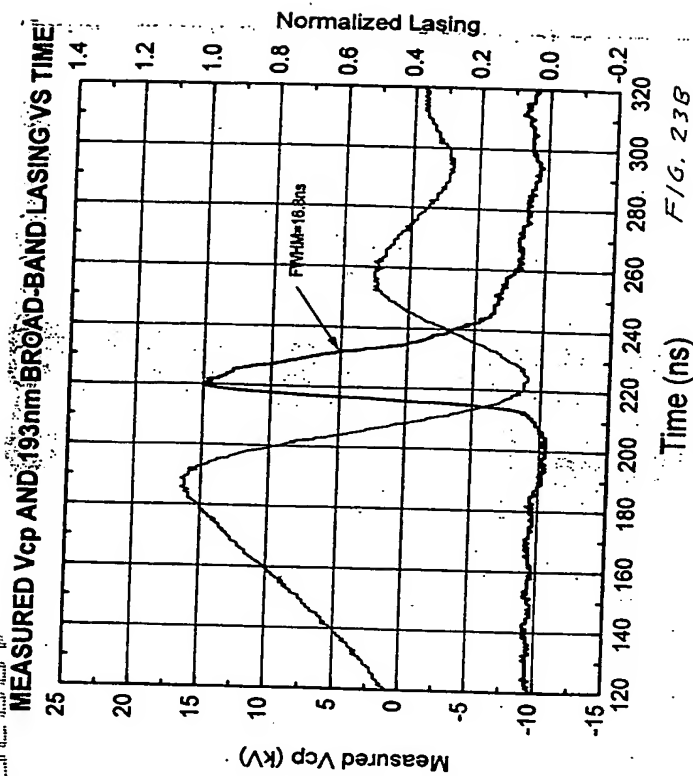
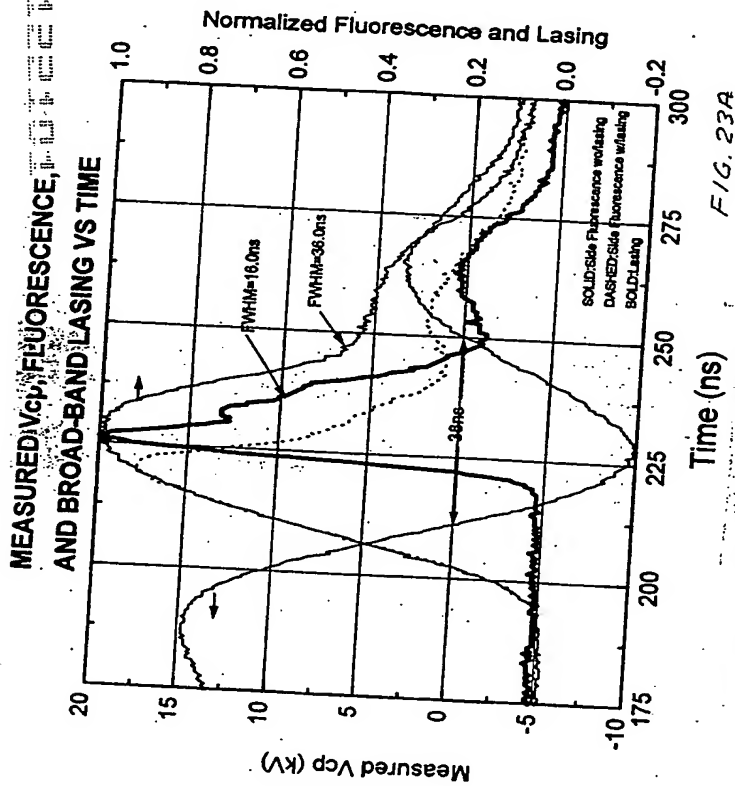


FIG. 23F

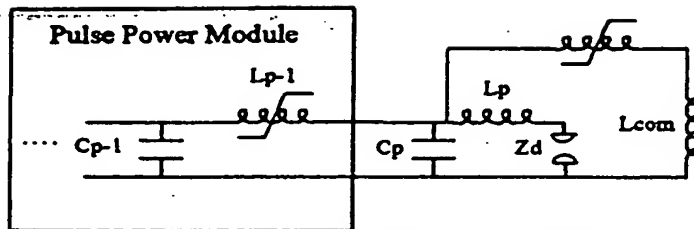


Fig. 11 Schematic diagram of the Current Overshoot Maximizer (COM).

FIG. 23G

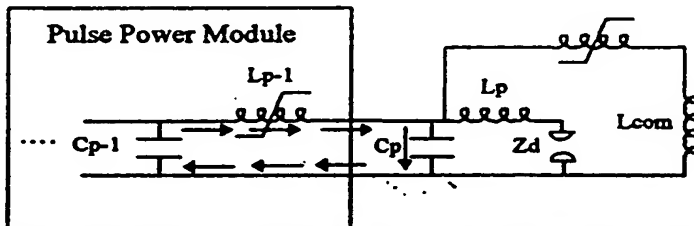


Fig. 12a. Step 1 in COM operation: pulse charging of  $C_p$ .

FIG. 23H

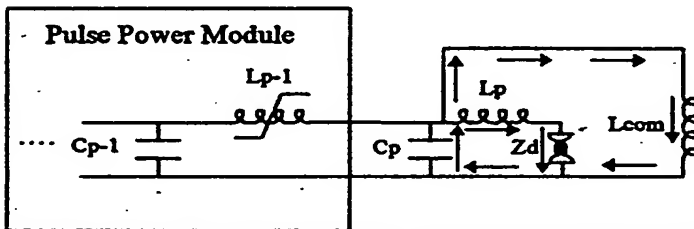


Fig. 12b. Step 2 in COM operation: COM switches on nearly simultaneous with beginning of avalanche discharge.

FIG. 23I

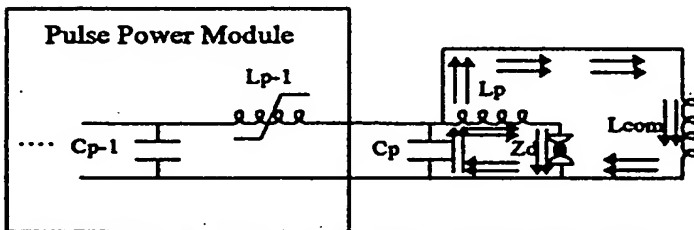


Fig. 12c. Step 3 in COM operation: current flow builds in the discharge and  $L_{com}$ .

FIG. 23J

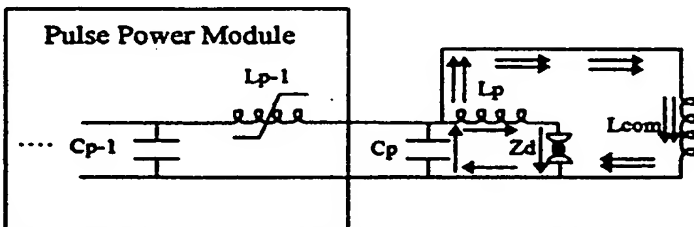


Fig. 12d. Step 4 in COM operation: the voltage on  $C_p$  passes through zero and the current flow through the discharge begins to subside, but the  $L_p$  inductance and the  $L_{com}$  inductance force continued current flow from  $C_p$ .

FIG. 23K

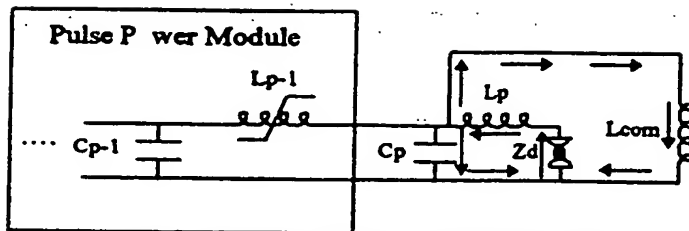


Fig. 12e. Step 5 in COM operation: The current through  $L_p$  and the discharge finally reverses and this current flows into  $C_p$  and  $L_{com}$ .

FIG. 23L

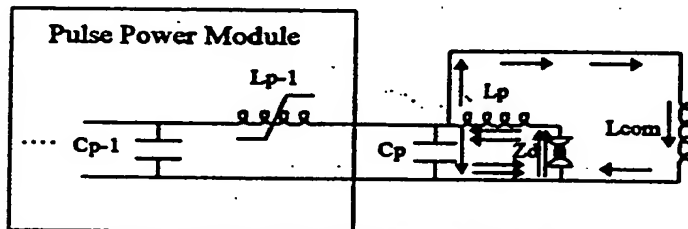


Fig. 12f. Step 6 in COM operation: The reverse current flow through the discharge is driven by both the  $L_{com}$  current and the negative voltage on  $C_p$  and thus is increased over that obtained by  $V_{cp}$  overshoot only.

FIG. 23M

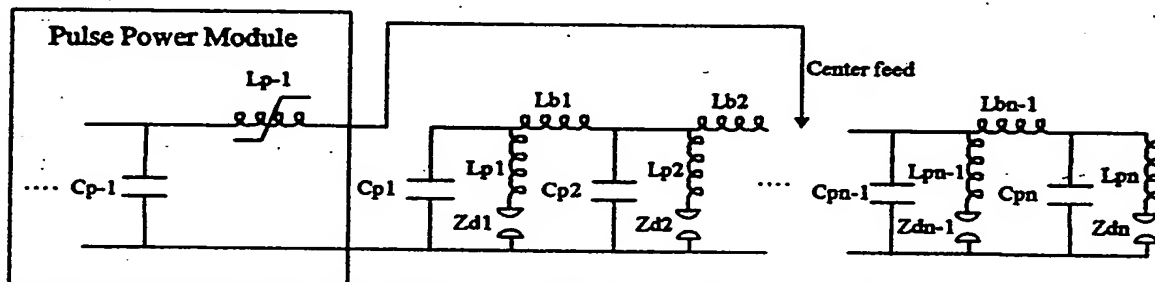


Fig. 13. A more accurate schematic representation of the laser chamber showing the distributed circuit components.

FIG. 23N

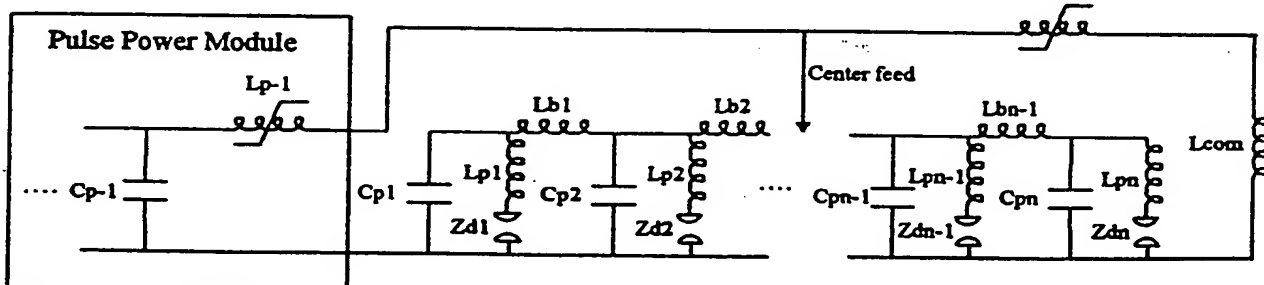


Fig. 14. The COM inductor and its relation to the distributed circuit components of the laser chamber.

# CALCULATED DISCHARGE IMPEDANCE AND MEASURED DISCHARGE CURRENT

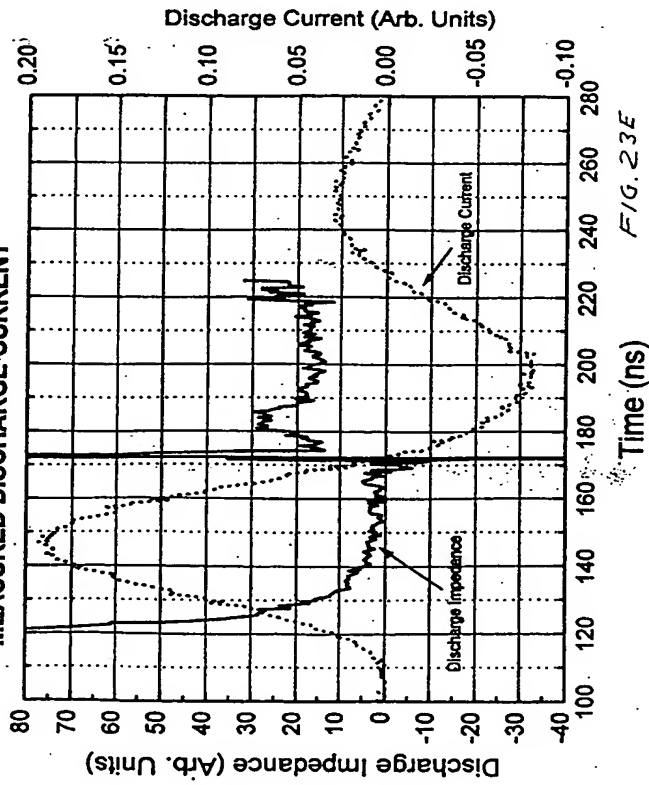


FIG. 23E

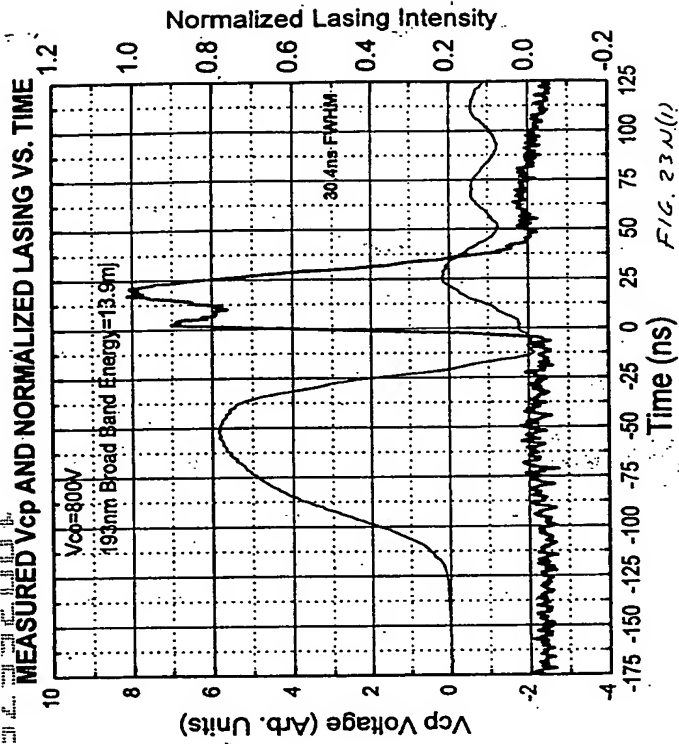


FIG. 23N(1)

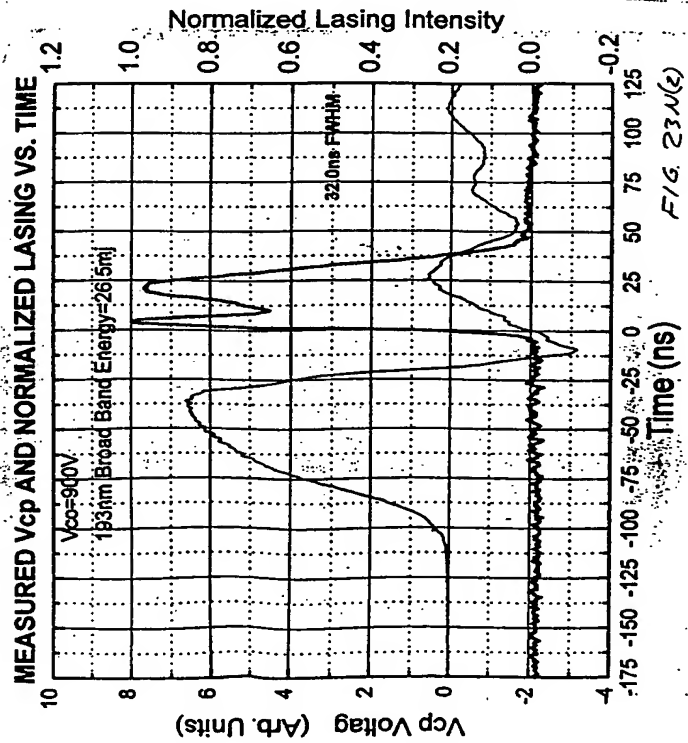


FIG. 23N(2)

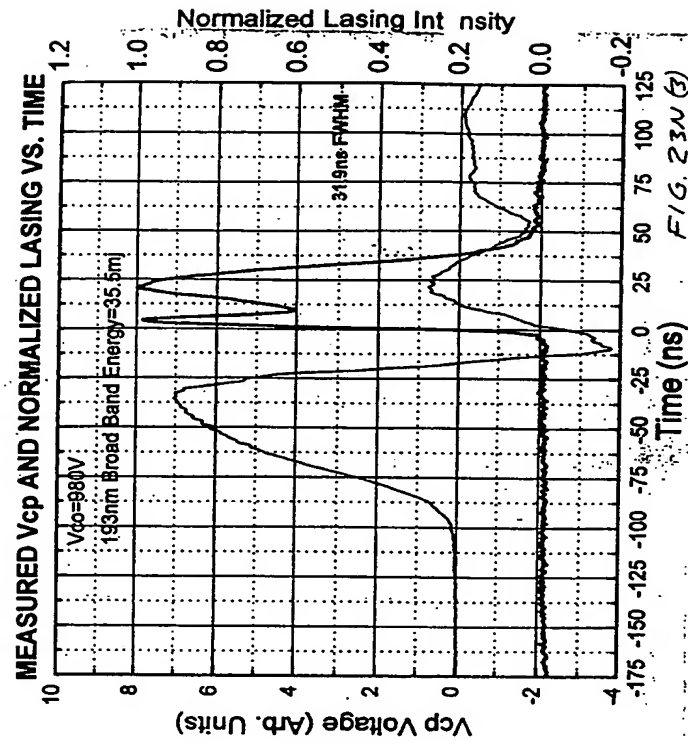
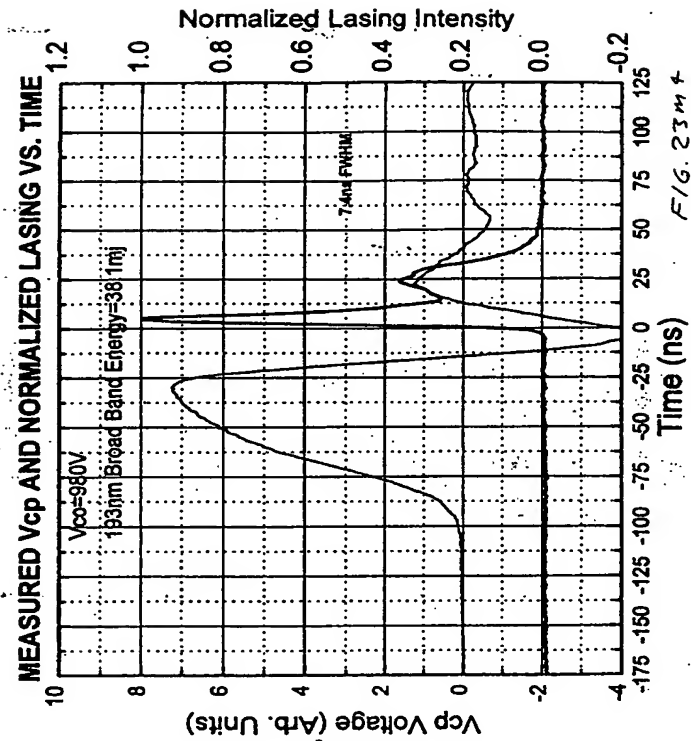
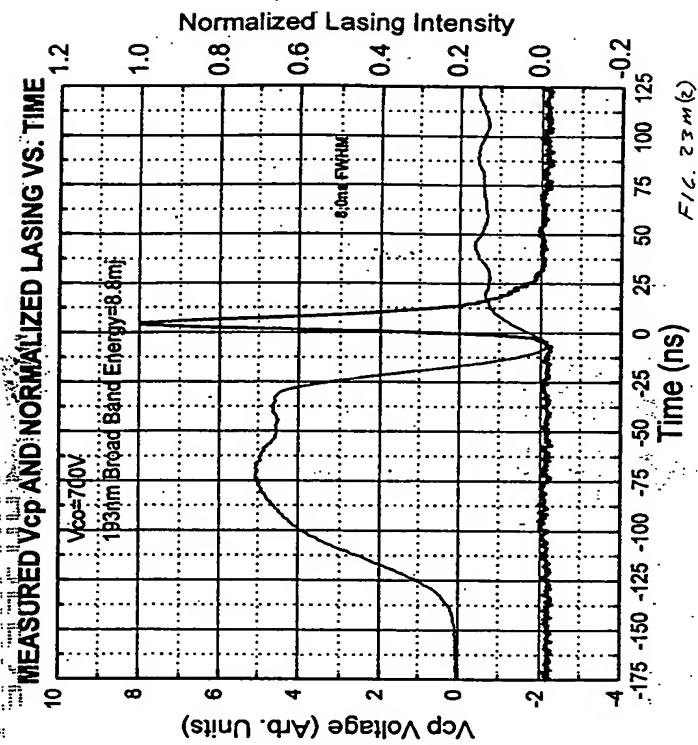
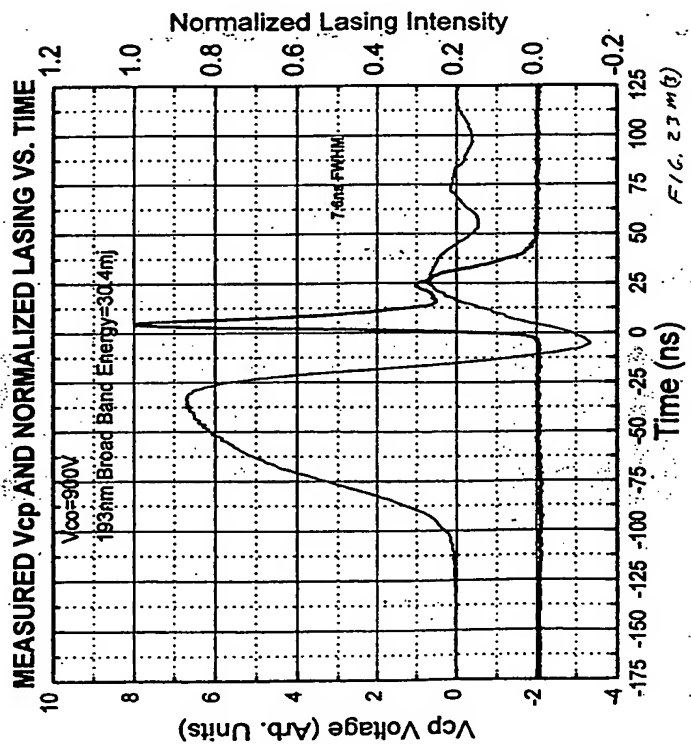
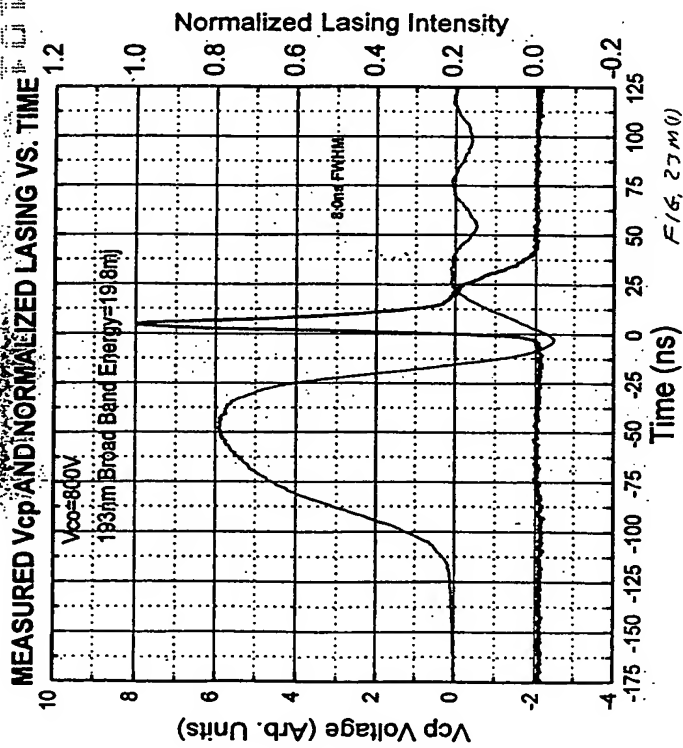


FIG. 23N(3)



SECRET 323300

MEASURED 193nm BROAD-BAND ENERGY VS. Vco

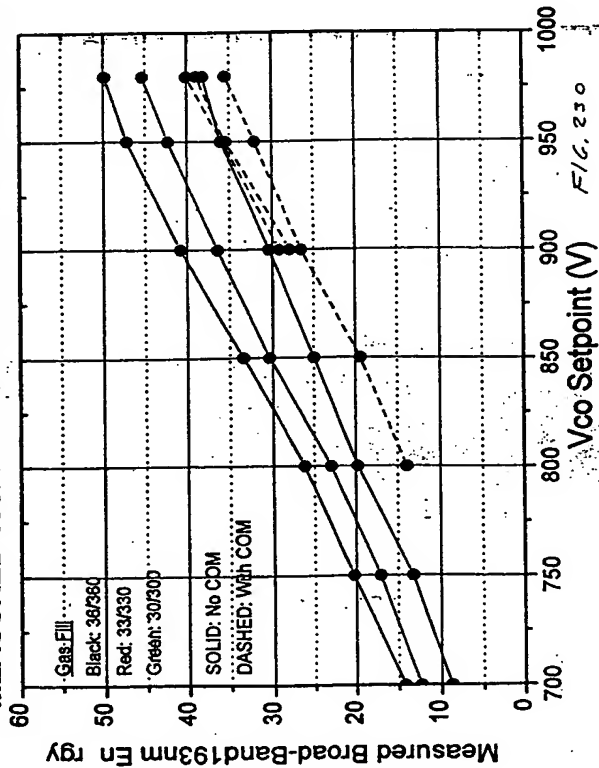
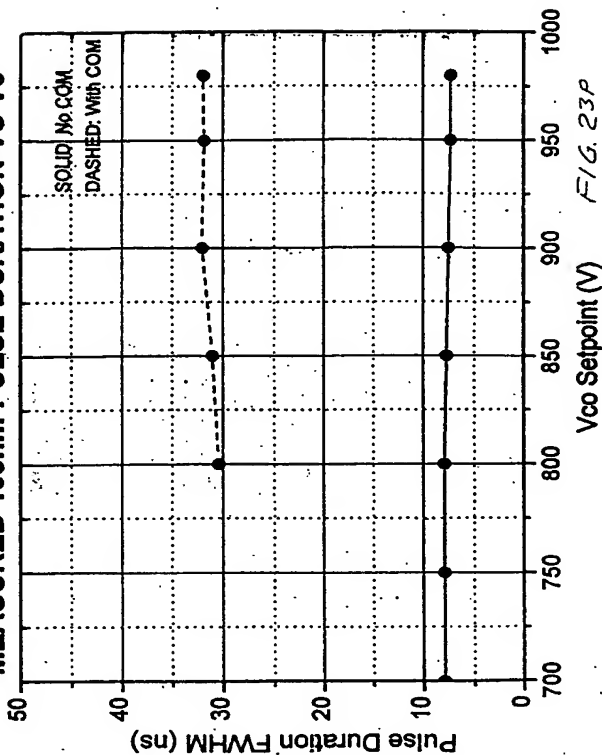


FIG. 23P

MEASURED 193nm PULSE DURATION VS Vc



MEASURED 248nm Lasing Energy vs. Operating Voltage

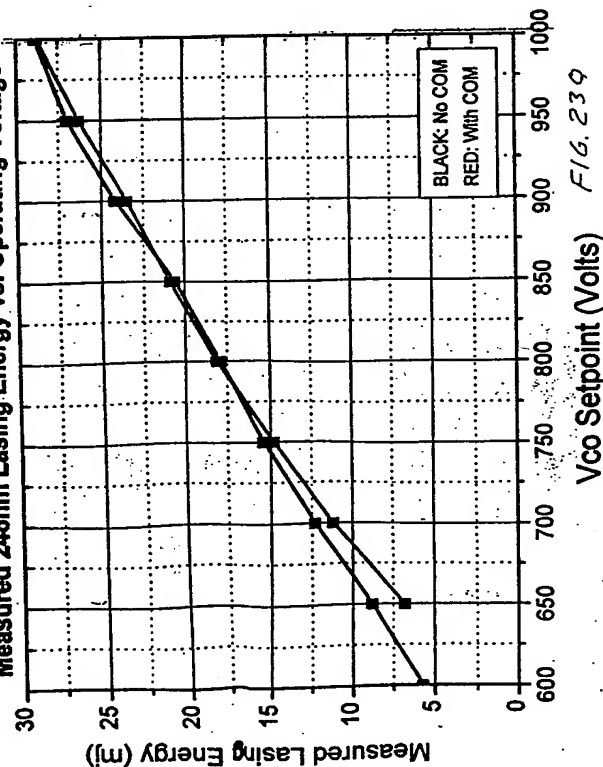


FIG. 23Q

Measured 248nm FWHM Spectrum vs. Operating Voltage

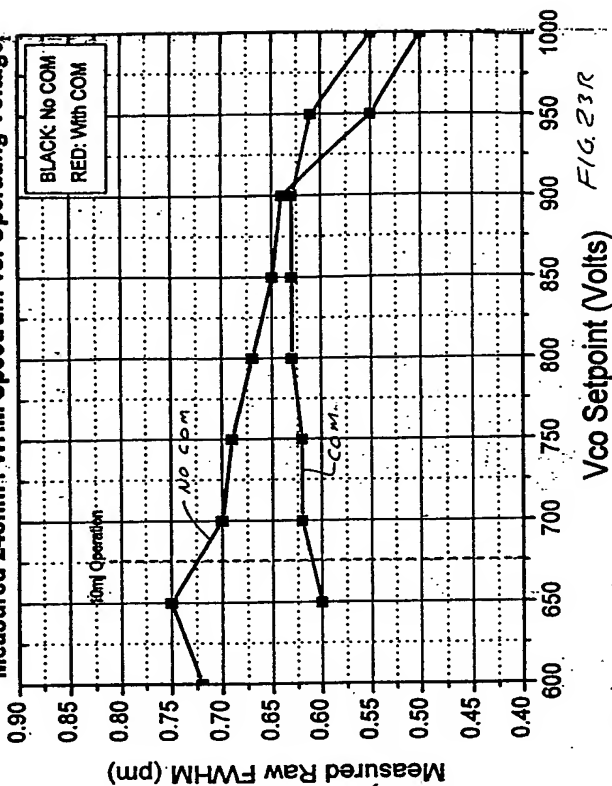


FIG. 23R

Measured 248nm 95% Spectral Integral vs. Operating Voltage

